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11 January 2008

Bureau of Land Management
Western Oregon Plan Revisions Office
P.O. Box 2965
Portland, OR 97208
Submitted electronically to:
http://www.daylightdecisions.com/wopro/

Re: PRC and Expert Comments on Western Oregon Plan Revisions DEIS

Dear Bureau of Land Management:

We thank you for the opportunity to comment on the Draft Environmental Impact Statement for Western Oregon Plan revisions (WOPR). This is a brief cover letter that summarizes our technical and policy concerns about the DEIS, and which are detailed in several attached staff and expert reports. Please enter this letter and all of the reports and additional material submitted with it into the comment record.

Who We Are

PRC is a non-profit conservation organization dedicated to the development and implementation of science-based public policies that protect and restore aquatic ecosystems and the species that depend on them. PRC is incorporated and has its headquarters in the State of Oregon. In 1993, PRC led an environmental coalition to petition for federal protection under the ESA of Pacific coho salmon in Oregon, Washington, Northern California, and Idaho. PRC has over 750 members throughout the United States and Canada. PRC members participate in recreational activities, such as fishing, hiking, backpacking, cross-country skiing, nature photography, and river and lake boating throughout the Pacific Northwest, and, where possible, observe and benefit from wild salmon and steelhead. Many of PRC's members, board members, and staff reside in Oregon, and they cherish, recreate on, and in some cases earn their livelihood from the quality of rivers and streams that are affected by the management of BLM lands.

PRC is particularly concerned about the effective application of scientific knowledge and farsighted public policy to public land and resource planning decisions. Throughout PRC's history we have worked with agencies, scientists, local citizens groups, and political leaders to ensure that public land management is consistent with the conservation of rivers, freshwater ecosystems, and aquatic life. It is our belief that fairness, efficiency and effectiveness in management stem in part from ensuring that planning is grounded by goals consistent with our society's long-held expectation that rivers will remain, or become, clean, healthy, and productive abodes for native fish and wildlife, and will continue to sustain many human uses.

PRC's Involvement in WOPR

PRC provided scoping comments to the BLM with regard to the WOPR process on October 21, 2005. In those comments we emphasized the need for BLM to carefully justify and thoroughly address both local and regional consequences of any proposed weakening of the Aquatic Conservation Strategy (ACS), Late Successional Reserves (which confer conservation benefit for many critical watersheds), or any other departures from the current Northwest Forest Plan (NWFP). We pointed out that the NWFP's Forest Ecosystem Management Assessment Team (FEMAT) and the FEMAT science document set a benchmark for the current applicable science, as well as the scope and nature of analysis and synthesis that is necessary to justify major planning decisions about forest ecosystems. We regret that the WOPR DEIS exhibits little indication that BLM heeded any of those comments. The WOPR has become dangerously unmoored from society's core expectation that BLM will work to provide clean rivers, high-quality wildlife habitat and healthy fisheries.

BLM's Obligation for Fair and Full Disclosure of Intent and Consequences

BLM has an affirmative duty to rely on the best available scientific information to inform its analyses of the environmental impacts of its proposed alternatives, to fully disclose this information to the public, and to clearly explain the agency's reasoning, including justification of any choice to use a particular analytical method instead of other available, credible, relevant and appropriate analytical methods. BLM cannot fulfill this duty by selectively using or considering only those methods, analyses or information which the agency interprets to least constrain its management preferences – "cherry-picking" in common parlance. Yet, as made plain by the expert reviews we sponsored (included herein), the analyses in the DEIS show a consistent pattern of bias that distorts disclosure and reasoned comparison of alternatives.

Expert reviewers repeatedly noted that the DEIS consistently favored analyses and conclusions that bias the consequences of logging and roads downward, even when more reliable and accepted analytic methods are available. The DEIS relied heavily on "home-grown" analytical models that have not been calibrated, rest on untested and questionable simplifying assumptions, whose error and reliability remain entirely undisclosed, and which BLM has made no attempt to validate with available empirical data. The resulting biases and limitations of analytic models obscure, rather than disclose, likely differences among the alternatives in their net impact on streams and rivers. The experts note that such uncertainties and risks are further compounded by the absence of any plan for credible effectiveness monitoring, which could provide such validation or, in the alternative, allow adaptive management corrections in the event that modeled predictions proved inaccurate. However PRC notes that the DEIS fails to address and accurately interpret the BLM's own monitoring data that are already available concerning the effectiveness of the past decade of management of NWFP lands (see PRC Scoping Comments for sources). Therefore it stretches credibility for PRC to be optimistic that BLM could faithfully implement a future monitoring and adaptive management program even if one were adequately specified in this DEIS.

The DEIS goes beyond cherry picking, in fact, by simply ignoring all accountability for some large and important fields of impact. For example, the DEIS discloses that sediment delivery to

streams from existing ill-designed and poorly maintained roads on BLM lands amounts to about 60,000 cubic yards of sediment per year. That is, on average, the BLM's management already dumps, conservatively estimated, about 4000 dump truck loads of sediment into streams and rivers annually, or about 10 truck loads every day of the year somewhere in Oregon. Yet these regionally significant, unquestionably harmful consequences of massive, ongoing sediment pollution caused by retention and use of the existing road network are not addressed in the DEIS. Nor is any alternative in the DEIS designed purposefully to reduce the ongoing harm that this sediment source produces to rivers, fish and wildlife, including coho salmon and other at-risk species--with the possible exception of the No Action Alternative which retains current NWFP management. However, the current NWFP has been tepidly administered by the BLM over the last decade, thus we question whether the existing road reduction and remediation goals of the NWFP are even being met in most watersheds with BLM lands.

Science Concerns

Please refer to the expert reports contained herein for a wealth of comment and questions about the BLM's scientific assumptions and methods in the DEIS, particularly with regard to effects on watershed processes and riparian and freshwater habitats. The expert reports documented many examples of substantial analytic or logical errors, unrecognized assumptions, misinterpretation of sources, or wholesale omissions of relevant scientific information and sources. Dr. Dale McCullough found the methods used in the DEIS to assess impacts of the alternatives on stream temperature, for example, to be based on erroneous or biased models, and too narrowly defined to account for some of the more significant effects on temperature, such as sediment load and channel morphology and stability, that are themselves affected by the actions proposed in the alternatives (effects not adequately addressed in the DEIS to assess their secondary effect on stream temperature).

Stability of stream flows is a factor specifically identified on the O&C Lands Act. In his examination of the DEIS, hydrologist Jon Rhodes found the analysis of peak flow variation in relation to proposed management actions to be crude, biased by unjustified assumptions, and in ignorance of well-known recent scientific publications. The DEIS failed utterly to disclose well-documented effects of logging on low summer and fall streamflows, an equally significant risk to fish and other aquatic life as well as to human uses. Rhodes also reports consistent bias toward underestimation of flow variation effects in its analyses; because many of these effects are additive, the cumulative magnitude of the bias toward underestimation of adverse effects on flow could be very high, but remains undisclosed.

Dr. William Weaver and Danny Hagans report substantial oversights and flaws in the DEIS analysis of erosion and sedimentation. Sediment introduced to streams and rivers as a consequence of logging, roads, and other ground-disturbing practices is a widespread cause of harm to fish and other aquatic life. Weaver and Hagans report that many sources of sediment to streams that are known to be affected by logging, roadbuilding, road maintenance, fuels treatment, and broadcast burning are not addressed or analyzed in the DEIS. The sum magnitude of these omissions—coupled with their known sensitivity to management measures that vary among the alternatives, means the DEIS is not adequate to allow a reasoned comparison of the alternatives. Weaver and Hagans also provide a point-by-point clarification of the limitations and

weaknesses of Best Management Practices identified in the DEIS for sediment control, pointing out their inherently limited ability to control sediment if they are solely relied on to mitigate for regional or watershed-scale management decisions that increase--or fail to reduce—sources of erosion and delivery of sediment to streams.

In their review of analysis of large wood recruitment to streams, Steve Ralph and Dr. Neil Lassettre similarly emphasize the DEIS's failure to calibrate or verify modeled data against field empirical data, and the lack of any analysis of sensitivity, error, or bias in the analytic models that were devised for the DEIS, and the omission of some important sources of LWD from analyses. The DEIS analysis also failed to account for the significance of current stream conditions in determining how critical and effective future wood recruitment might be to sustaining or restoring fish and other aquatic resources, and does not account for regional differences in treesize and delivery dynamics that may substantially affect outcomes. In PRC's view, rather than affording a clear and reasonable view of differences among alternatives, the sum effect of these flaws is to make highly unreliable the DEIS predictions and obscure the likely effects of reduced stream protection alternatives.

<u>WOPR and its Departure from the NWFP</u>

The WOPR DEIS violates NEPA because it does not adequately describe how the action alternatives will deviate from the Aquatic Conservation Strategy and what the environmental impacts of those deviations will be. In particular, the DEIS does not explain the impacts in light of significant discussion in support of the Aquatic Conservation Strategy in the Northwest Forest Plan Record of Decision, the Northwest Forest Plan Supplemental Environmental Impact Statement, the Forest Ecosystem Management Report, the Biological Opinion on the Northwest Forest Plan conducted in 1997, and watershed analyses conducted to implement the Aquatic Conservation Strategy.

It greatly concerns PRC that the DEIS fails to disclose in a clear manner that the BLM intends to eliminate the Aquatic Conservation Strategy on BLM Lands. It also fails to adequately disclose the environmental impacts and risks of eliminating this cornerstone feature of the Northwest Forest Plan, which was designed to provide for the survival of at-risk resident and anadromous fish populations in the face of a severely degraded environmental baseline. For example, scientific teams involved in the development of the NWFP performed viability analyses on seven stocks of salmonids to determine the percent likelihood that populations would be well-distributed, be restricted to refugia, or become extirpated under each alternative. The BLM should have conducted similar viability analyses to determine the expected outcome of each WOPR action alternative.

The DEIS fails to transparently disclose the specific strategies and action that the BLM will use to replace each aspect or component of the Aquatic Conservation Strategy (ACS) and components that are not specifically part of the ACS, but that were intended to further the goals of the ACS. These aspects and components are:

1. *ACS objectives:* The ACS sets forth nine objectives to prevent aquatic ecosystem degradation and restore aquatic habitat over broad landscapes. The BLM proposes to

replace these objectives with greatly simplified objectives to protect fish and water and for management in riparian management areas. The BLM has not explained the environmental impacts of this change.

2. *Project-level compliance with the ACS objectives:* The ACS requires the BLM to evaluate each project to determine whether it meets or prevents attainment of the objectives. Management actions not consistent with the ACS objectives are prohibited. The BLM has failed to explain the impacts, including the cumulative effects, of allowing projects across the landscape that would have been prohibited under the ACS because they would not have been consistent with the ACS objectives.
3. *Riparian management area delineation, including mapping and protection of unstable slopes:* The ACS requires riparian reserve delineation across land allocations. The BLM has provided confusing, contradictory information regarding its intent to require riparian management areas across land allocations, including in late-successional management areas. The explanation is so unclear that it violates NEPA's disclosure requirement. The BLM must also disclose the environmental impacts of any plan to limit delineation of riparian management areas across land allocations. The BLM has also not disclosed the environmental impacts of failing to delineate riparian management areas adjacent to unstable slopes.
4. *Riparian reserve/ management area widths.* The BLM has failed to adequately disclose the environmental impacts that will result from the severe reduction in riparian buffer widths for all stream types.
5. *Riparian reserve standards and guidelines.* The BLM has failed to disclose the environmental impacts that will result from eliminating the ACS mandatory standards and guidelines that limit habitat degrading activities in riparian buffers and replacing them with optional management actions and best management practices.
6. *Key Watersheds.* The BLM has failed to clearly disclose its intention to eliminate key watersheds. It has also failed to effectively explain the environmental impacts of eliminating these critical refugia and failing to replace them with any other strategy for the protection of refugia.
7. *Watershed Analysis.* The BLM has not disclosed its intentions with regard to the future use of or requirement for watershed analyses, or what the environmental impacts will be if it chooses to disregard and/or fails to update these analyses.
8. *Watershed Restoration.* The BLM has failed to adequately describe its restoration strategy, the basis for any claims that watershed restoration activities will be comparable under the no action and action alternatives, and the environmental effects of the changed restoration strategy.
9. *Late-Successional Reserves.* The BLM has failed to explain the impact of decreased late-successional protected areas on aquatic ecosystems.

<u>WOPR and the Endangered Species Act</u>

Under the Endangered Species Act, the BLM has an affirmative duty to conserve species and habitats affected by its management. This duty goes beyond avoidance of "jeopardy" for listed species; it requires the BLM to use its full authority and discretion to advance species conservation purposes independently of mandates under other legal authorities. Furthermore,

when faced with alternative policy choices, the conservation duty compels the BLM to choose the alternative that best achieves species conservation where non-conservation purposes would be equally served. PRC finds that the DEIS does not provide a rational basis to conclude that the BLM will meet its conservation duty by implementing any of the action Alternatives. Although there are 11 ESA listed fish species that may be adversely affected by this proposal, the DEIS does not include analysis to support a "no jeopardy" finding for these salmon, steelhead, suckers, bull trout and chub. A listing proposal will be made for Oregon Coast coho in early February, and a proposal to list will add this ESU to the list of stocks requiring consultation. Because ESA compliance is stated by BLM to be an important, in fact determinative, minimum decision standard for this process, it would best serve public policy to refrain from issuance of any final decision until the public has been afforded the opportunity to review the Biological Opinions that must be prepared by USFWS and NOAA Fisheries for listed species.

WOPR and The Clean Water Act

The BLM has not demonstrated that the proposed deviations from the Northwest Forest Plan and its ACS will provide reasonable assurance of compliance with Clean Water Act requirements, including numeric and narrative water quality criteria, relevant targets in Total Maximum Daily Loads (TMDLs), presumptions against degradation and the full protection of beneficial uses. PRC's description of the agency's water quality obligations coupled with conclusions of expert reports demonstrate that the agency's analysis of impacts on freshwater ecosystems is profoundly flawed and is based on a failure to recognize the full extent of the BLM's obligation to prevent degradation of water quality, particularly in smaller and non-perennial water bodies. Our comments identify numerous respects in which the BLM's findings that water quality will be adequately protected by the proposed management do not have a sufficient scientific basis. In sum, the agency has not adequately justified its proposal to abandon an approach we know is capable of meeting water quality standards and which has been approved by EPA for this purpose -- even in watersheds where the current management standards must be water quality restoration plan goals in the form of sediment and temperature TMDLs.

Wild and Scenic Rivers

Wild and Scenic River protection has been an important element of PRC's conservation mission since our inception. The WOPR DEIS does not adequately evaluate impacts on protected values of designated, eligible or suitable Wild and Scenic Rivers. Specifically, reasonably foreseeable impacts from land management changes within, upslope and/or upstream of river corridors are not disclosed, nor are water quality impaired segments given any consideration. The DEIS does not meaningfully demonstrate how the action alternatives will provide adequate protection to designated, eligible and suitable river segments, nor could we find evidence in the record that BLM considered potential additions to the National Wild and Scenic River System, as required by statute and implementing rules and guidance.

Economics and Community Stability

PRC commissioned an economic report from Ernie Niemi and Sarah Reich of the respected firm EcoNorthwest, to examine the BLM's interpretation of language in the O&C Lands Act in this

DEIS. The EcoNorthwest Report found that in the DEIS BLM adopted assumptions about economic values and relationships that are not supported by the professional literature, and are contrary to other federal economic studies conducted over the past decade. The DEIS fails to define economic stability in a way consistent with economic theory, and fails to describe the current status and basis of economic stability of local communities and industries. The DEIS instead adopts a tenuous and undefended, simplistic assumption that higher levels of logging and reduced protections for streams and old growth forests will have a positive impact on economic and community stability. Unfortunately this simplistic assumption flies in the face of substantial contrary published evidence and prior conclusions in FEMAT and other federal agency assessments. Because it fails to account in any meaningful way for the mix of benefits and costs that increased logging and reduced environmental protections always bring to economies and communities, the DEIS cannot provide a reasonable basis for concluding that alternatives are more or less beneficial economically or in terms of community stability.

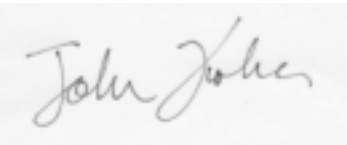
The oft-repeated media claims of certain BLM leadership that the preferred alternative is superior in "promoting community stability" or economic well-being, or that it brings management of BLM lands closer to what was intended under the O&C Lands Act, are professionally dubious, and in our view profoundly mislead the public. We think this rises above a matter of disagreement, to the level of misrepresentation.

Conclusions

The pervasive and systematic biases, flaws, errors, and oversights in this DEIS preclude it serving as an adequate NEPA document. It is our view that BLM must markedly improve these analyses if BLM is to meet its obligation of disclosure and reasoned analysis, and issue a supplemental DEIS before proceeding with a Final EIS and decision. Alternatively, BLM could withdraw the DEIS and revert to NWFP authority.

PRC science and policy staff stand ready to help clarify and discuss any of our comments with your staff—just give us a call. We hope our comments will assist in BLM's development of a good plan that brings long-term public benefit to Oregon's forests and rivers.

Sincerely,



John Kober
Executive Director

and on behalf of
David Moryc
American Rivers

Enclosures:

(1) Pacific Rivers Council Comments on the Draft Environmental Impact Statement for the Revision of the Resource Management Plans of the Western Oregon Bureau of Land Management Districts, January 11, 2008 (65pp)

(2) Niemi, Ernie and Reich, Sarah, January, 2008. "Comments on the Draft Environmental Impact Statement for the Revision of the Resource Management Plans of the Western Oregon Bureau of Land Management Districts." Prepared for Pacific Rivers Council by EcoNorthwest, Eugene, Oregon (9 pp, with additional 12 pages of author vitae)

(3) McCullough, Dale. January 10, 2008. "Review of the Basis for Riparian Management Relative to Water Temperature Control in the USDI Bureau of Land Management Draft Environmental Impact Statement for its Western Oregon Plan Revisions." (71 pp report, 61 pp figures, 8 pp vitae).

(4) Weaver, William E. and Danny K. Hagans. January 2008. "Analysis of Erosion and Sedimentation Issues in the Draft Environmental Impact Statement for the Revision of the Resource Management Plans of the Western Oregon Bureau of Land Managmenet Districts, Prepared for Pacific Rivers Council by Pacific Watershed Associates, Arcata, CA (44 pp, with additional 4 pages of vitae on authors).

(5) Rhodes, Jonathan J. December 28, 2007. "Review of Stream Flow Analyses in the USDI Bureau of Land Management Draft Environmental Impact Statement for its Western Oregon Plan Revisions. Prepared for Pacific Rivers Council by Planeto Azul Hydrology, Portland, Oregon. (19 pp report, 8 pp vitae).

(6) Lassettre, Neil and Ralph, Stephen. January, 2008. "Review of LWD recruitment model used within NEPA Draft Environmental Impact Statement (DEIS) for the Revision of Resource Management Plans of the Western Oregon Bureau of Land Management Districts." Technical Memorandum prepared for Pacific Rivers Council by Stillwater Sciences, Seattle, WA (7 pp report, with 6 pp. author vitae).

(7) Frissell, Chris and Carnefix, Gary. October, 2007. "The Geography of Freshwater Habitat Conservation: Roadless Areas and Critical Watersheds for Native Trout." In Proceedings of Wild Trout IX Symposium, Working Together to Ensure the Future of Wild Trout" (8 pp).

(8) Swanson, Fred. February 19, 2003. Memorandum to Joyce Casey and Chester Novak regarding ACS-SEIS Scientist Interview, and attachments transmitting interview responses (16 pp) (hard copy only, not included in electronic transmission of comments package)

PACIFIC RIVERS COUNCIL'S COMMENTS ON THE WESTERN OREGON PLAN REVISION DRAFT ENVIRONMENTAL IMPACT STATEMENT

INTRODUCTION:

Pacific Rivers Council submitted scoping comments on October 21, 2005 and additional comments January 11, 2007. We incorporate by reference those comments for these comments on the draft environmental impact statements. The following comments outline detail our legal, policy, and scientific concerns regarding the BLM's draft environmental impact statement for the Western Oregon Plan Revision.

I. The BLM's proposals are a significant departure from the existing Aquatic Conservation Strategy

A. The Northwest Forest Plan's Aquatic Conservation Strategy compared with aquatic protections proposed for the Western Oregon Plan Revisions

i. The Aquatic Conservation Strategy and its components

The Aquatic Conservation Strategy (ACS) was developed as "a cornerstone feature of the NFP" because the "FEMAT analysis acknowledged that in order to provide for the survival and recovery of at-risk resident and anadromous fish populations in the face of a severely degraded environmental baseline, an immediate and aggressive effort to implement sweeping changes in land management practices on federal lands would be necessary." National Marine Fisheries Service, Northwest Region 1997 (hereinafter NWFP BiOp) at 27; see also *Id*. at 39. The ACS strives "to maintain and restore ecosystem health at watershed and landscape scales to protect habitat for fish and other riparian-dependent species and resources and restore currently degraded habitats. This approach seeks to prevent further degradation and restore habitat over broad landscapes as opposed to individual projects or small watersheds." United States Department of Agriculture and United States Department of the Interior 1994b (hereinafter NWFP ROD) at B-9. The strategy includes four essential components: riparian reserves, key watersheds, watershed analysis, and watershed restoration. "Each part is expected to play an important role in improving the health of the region's aquatic ecosystems." *Id*. at 9; see also NWFP BiOp at 7.

The ACS also sets forth nine objectives for management. Agency decision makers must evaluate whether each project complies with these ACS objectives. Management actions that fail to meet or that prevent attainment of the ACS objectives are prohibited. NWFP ROD at B-10.

ii. *WOPR's proposed changes to the ACS and its components*

The BLM's action alternatives all propose to eliminate the Northwest Forest Plan's (NWFP or NFP) Aquatic Conservation Strategy. Although the BLM will retain some of the components of the ACS, the protections of these components will be significantly diminished.

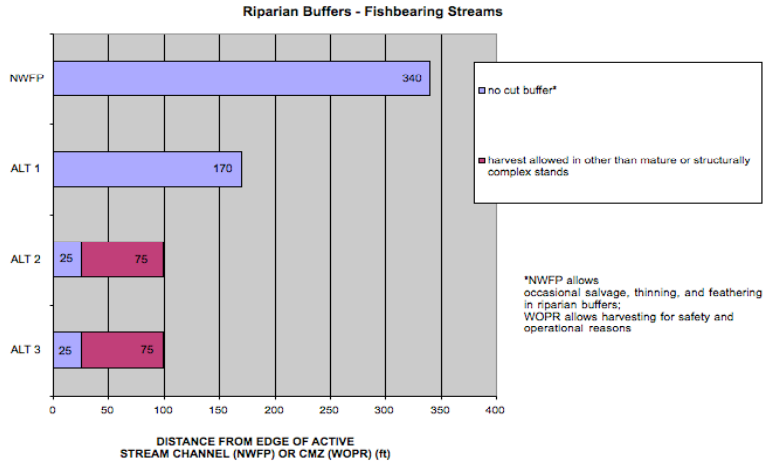
a. The ACS objectives

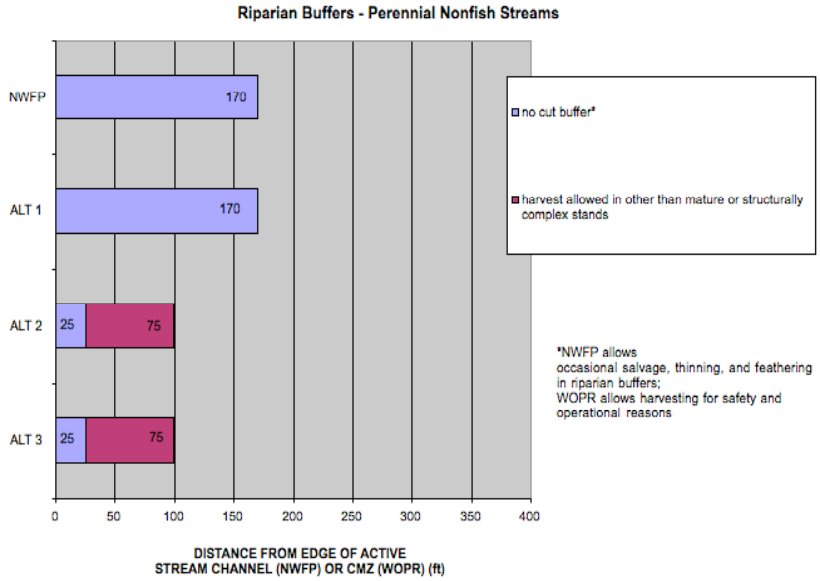
The BLM proposes to eliminate the ACS objectives in all three alternatives. It has replaced the ACS objectives with greatly simplified objectives: 3 to benefit fish, 2 to benefit water, and the objectives to "[m]anage timber to promote the development of mature or structurally complex forests" and to "[p]rovide for the riparian and aquatic conditions that supply stream channels with shade, sediment filtering, leaf litter and large wood, and root masses that stabilize stream banks" within riparian management areas. United States Department of the Interior, Bureau of Land Management. 2007 (hereinafter WOPR DEIS) at 70, 81. The BLM will no longer to be required to evaluate each project to determine whether it meets or prevents attainment of ACS objectives.

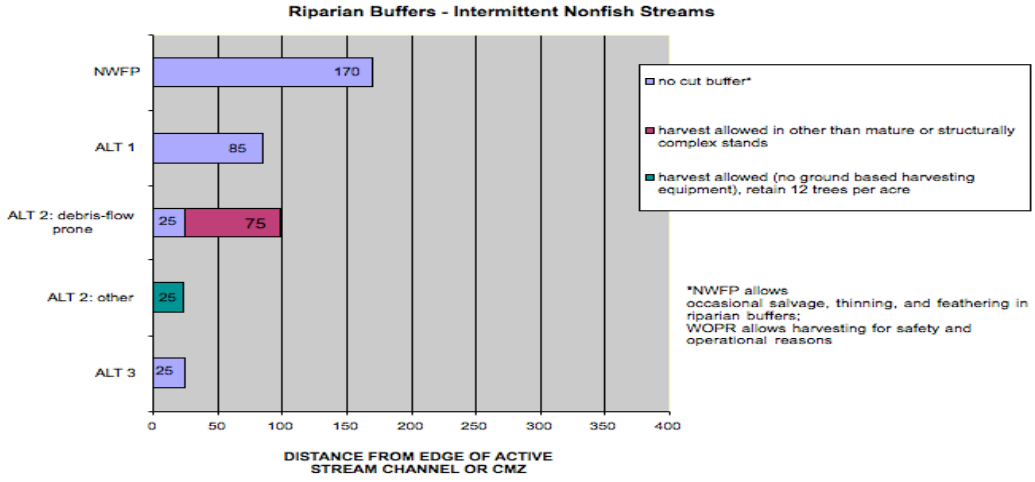
b. Riparian Reserves

i. widths

The Riparian Management Areas, which will replace the NWFP's Riparian Reserves, will be significantly narrower than Riparian Reserves for all action alternatives. See the following figure for a comparison of riparian buffers (riparian reserves and riparian management areas) for the no action alternative and all three action alternatives. The only buffer width that would be maintained for any alternative would be that alternative 1 proposes to maintain the same buffer width as the NWFP for perennial, non-fish bearing streams. Furthermore, although riparian reserves occur across all allocations under the NWFP, it is unclear whether the BLM is proposing that riparian management areas will only occur in timber management areas, and not in late-successional management areas. Alternative 2 is especially troubling with regard to intermittent non-fishbearing streams, where harvest will be allowed up to the stream's edge if the stream is not classified as debris-flow prone.







ii. standards and guidelines

The NWFP sets forth many standards and guidelines to limit aquatic ecosystem-degrading activities within riparian reserves. The BLM proposes to eliminate these standards and guidelines for all action alternatives. Optional best management practices will be used to achieve water quality objectives. Furthermore, for alternatives 2 and 3, only the first 25 feet will be protected from timber harvest (except for Alternative 2, intermittent nonfish-bearing streams that are not debris-flow prone where harvesting can occur everywhere). In any remaining riparian management area, harvest will be allowed if the stands are not mature or structurally complex. This means that the limitations on harvest are greatly reduced in riparian management areas compared to those provided in riparian reserves, where timber harvest is prohibited, although silviculture is allowed "to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy objectives." NWFP ROD at C-31.

c. Key Watersheds

The NWFP designates key watersheds where restoration will be a priority and where additional standards and guidelines apply to protect these areas as refugia. The BLM proposes to eliminate key watersheds for all alternatives. Instead, the BLM will prioritize for restoration streams that have high intrinsic potential and that have high priority populations, as designated in recovery plans.

d. Watershed Analysis

It is unclear whether the BLM intends to continue updating watershed analyses under WOPR's proposed action alternatives. The BLM makes no mention of its intent to do so or even to use watershed analyses at all.

e. Watershed Restoration

It is unclear what BLM's proposed strategy is for watershed restoration for its WOPR action alternatives, other than to focus on streams with high intrinsic potential, streams with high-priority populations, as designated in recovery plans, and on projects that reduce chronic sediment inputs along stream channels and floodplains in source water areas. The BLM claims that watershed restoration would be similar for all four alternatives without explaining how this is so. WOPR DEIS at 590. The BLM does explain that it would engage in 11 miles of instream restoration per year for all action alternatives, but aquatic ecosystem restoration involves more than just instream restoration activities. The BLM also intends to use BMPs for all alternatives, including the BMP to use road restoration activities that would disconnect road flow paths from streams are permanently decommission the roads; however, BMPs are not mandatory.

B. <u>The WOPR DEIS violates NEPA because it does not adequately describe the details of each action alternative</u>

NEPA requires the BLM to consider the environmental impacts of its revision to the Western Oregon RMPs because the revision is a major federal action. 42 U.S.C. § 4332(2)(C). One of NEPA's goals is to "ensure[] that the agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process." *Baltimore Gas & Electric Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 97 (1983) (internal citations omitted). Although the BLM has purportedly attempted to comply with NEPA by preparing its Draft Environmental Impact Statement, its analysis is insufficient to satisfy NEPA because it fails to provide essential details for the public to understand what each action alternative actually entails.

An EIS's "form, content and preparation [must] foster both informed decision-making and informed public participation." *Salmon River Concerned Citizens v. Robertson*, 32 F.3d 1346, 1356 (9th Cir. 1994). This DEIS completely fails to meet this requirement because it does not explain how this proposal will change the ACS of the Northwest Forest Plan.

The ACS is a linchpin of the entire Northwest Forest Plan. This proposal eliminates essential parts of the strategy, but it does not do so in a clear and transparent manner. Instead, only after a thorough review of the entire EIS can a member of the public determine that the BLM apparently intends to eliminate the ACS and most of its components. In fact, most members of the public probably will not be able to discern this at all; only those with an extensive background regarding the ACS may be able to understand the fundamental changes to established aquatic protections that the BLM intends to make.

The Forest Ecosystem Management Assessment Team (FEMAT) explained in crafting the ACS, that the components of the ACS "are designed to operate together to maintain and restore the productivity and resiliency of riparian and aquatic ecosystems. They will not achieve the desired results if implemented alone or in some limited combination." United States Department of Agriculture, United States Department of the Interior, United States Department of Commerce, Environmental Protection Agency 1993 (hereinafter FEMAT) at V-32. This was reaffirmed in NWFP NEPA and ESA documents, which stated that the ACS "components are designed to operate together to maintain and restore the productivity and resiliency of riparian and aquatic ecosystems." United States Department of Agriculture and United States Department of the Interior 1994 (hereinafter NWFP FSEIS) at 2-28; NWFP ROD at B-12; NWFP BiOp at 39.

Despite the clearly interdependent nature of all four components of the ACS, the BLM fails to state explicitly anywhere in the DEIS that it intends to eliminate and/or reduce any components of the ACS, besides the riparian reserves. Only a few obscure references buried in the hundreds of pages of text indicate the BLM's plans with regard to the ACS.

Specific deficiencies include:

- Page XLV highlights the key differences between the four alternatives. Although one bullet indicates that a key difference between the alternatives involves the width and management of riparian area, there is no statement 1) that key watersheds will be eliminated, 2) that the standards and guidelines within riparian reserves will be eliminated, 3) that the ACS objectives will be eliminated, 4) that the overriding requirement of the ACS limiting actions that will impair attainment of the ACS objectives will be eliminated, or 5) what will happen to the watershed analysis and watershed restoration components of the ACS, to name some of the flaws.
- The maps on p. XLVII, 67, 75, 89, and 101, as well as maps in the map packet, do not show any riparian management areas in the late-successional management areas, nor do the calculations of the percentage of land within the riparian management area allocation include any riparian management areas that would be within late-successional management areas. The text describing the alternatives, however, specifically directs readers to those maps to examine where riparian management areas occur. For example, for Alternative 2, the WOPR DEIS directs readers to Map 4 (Land use allocations under Alternative 2) for "a representation of" riparian management areas and further states "Also see the map packet (Maps 3, 7, and 11) for detailed views of the land use allocations." We could find no statement in the WOPR DEIS that any of the three allocations could overlap, leading to the potential conclusion that the BLM does not intend for any riparian management areas to be

located within the areas now mapped as late-successional management areas. We found one table on page 719 that shows the percentages of riparian management areas "across all land use allocations." Because this table shows greater percentages of riparian management areas for each action alternative than is shown in all the maps mentioned above, we have tentatively concluded that the BLM is proposing to delineate Riparian Management Areas within other land allocations (e.g., Late Successional Management Areas). The maps and text present this issue in such an unclear, confusing, and directly self-contradictory fashion that we cannot be 100% confident in this tentative conclusion. The BLM has completely failed to provide for informed public participation regarding whether riparian management areas will apply in areas other than those areas mapped, i.e. areas within timber management areas.

If the BLM's rationale for failing to map RMAS in LSMAs is that the agency only mapped RMAs where they will take a significant bite out of the total timber harvest volume, i.e., within Timber Management Areas, then the BLM was required to explicitly state that. If the BLM assumes that it does not need to map these RMAs because RMA prescriptions do not preclude thinning, and therefore RMAs would not further limit any logging within the LSMAs, then again the BLM must explicitly state and justify that assumption. Otherwise, the public cannot tell that RMAs will be located within LSMAs. This information is critical to informed public participation because RMAs have a different management purpose than LSMAs, and different management actions apply in these two different allocations, for example some best management practices refer to restrictions that could be implemented in RMAs, but these same restrictions are not suggested for LSMAs, and in alternative 2, management actions regarding salvage are different in LSMAs and RMAs. Furthermore, because of these differences, potential similarities in thinning activities in LSMAs and RMAs would not justify the BLM's failure to map RMA, even if the BLM had explicitly stated such a rationale.

- Page XLIX presents a table comparing the four alternatives. Again, there is no mention of the ACS and how it will vary between alternatives. None of the flaws mentioned with regard to page XLV are addressed in this table either. While this may be only a "limited" comparison of the alternatives, the ACS and its implementation or elimination are certainly significant enough aspects of the BLM's proposal that they should be presented in this table.
- Buried in a section of the EIS discussing coordination of NWFP amendments with the Regional Ecosystem Office, the EIS states, "[t]his plan revision does not seek to amend the Northwest Forest Plan, but to replace the Northwest Forest Plan land use allocation and management direction through plan revision." WOPR DEIS at 23. This is a highly significant statement with great ramifications, and its implications must be addressed much more clearly. Specifically, it means that the entire ACS has been eliminated, and if any elements of the ACS are to be retained, they will need to be set forth in this EIS as part of the new plans. But nowhere does the EIS discuss all of the elements of the ACS, and which elements will be retained, which will be retained but modified, and which will be eliminated.

- Page 57 states that best management practices will be implemented to meet water quality standards. This suggests that NWFP standards and guidelines will no longer be used to meet water quality standards (simply because they are not mentioned). Statements such as this, from which an inference regarding the ACS's elimination might be drawn, are wholly inadequate to inform the public regarding the aquatic aspects of the BLM's proposal and their environmental impacts. Page 865 in the glossary confirms that "standards and guidelines" apply only to the No Action alternative, but substantive decisions cannot be explained in the glossary, rather than in the substance of the EIS, and still comply with NEPA's requirement to foster informed decision-making.
- Pages 104-109 describe alternatives that were considered but eliminated from detailed study. Reasons include that suggested alternatives do not meet the purpose and need of the proposal. If the BLM believes that retention of the full ACS will not meet the purpose and need of the proposal, then this would have been the place to say that. Instead, these pages make no reference to any other considered alternatives specifically addressing aquatic issues. Given that PRC specifically requested in scoping comments that the BLM propose one action alternative that retain full riparian reserves (nothing so far had alerted us to the fact that other aspects of the ACS were proposed to be changed), it is unclear why the BLM did not address alternatives here that would have required more aquatic protections. Is the BLM hiding from the public that members of the public have specifically asked for more riparian protection and just how great its changes to aquatic protections will be under all the action alternatives, or was it simply an oversight? Regardless, the EIS simply does not comply with the requirements of NEPA because of its failure to candidly and specifically address how it intends to change the aquatic protections of the NWFP, including the ACS.
- The table on page 110 appears to provide the most information regarding the changes to the ACS, but even this table is sorely lacking in clarity, information, and detail. Regarding "Timber Management of Riparian Management Areas," the table indicates that for the no action alternative, the BLM will "[m]anage[] timber to meet Aquatic Conservation Strategy objectives," but for the action alternatives, the BLM will "[m]anage timber to promote the development of mature or structurally complex forests." The lack of mention of the ACS objectives for the action alternatives leads us to deduce that the BLM is proposing to eliminate the ACS objectives. Similarly, regarding "Restoration Priority," the table indicated that for the no action alternative, the BLM will prioritize key watersheds for restoration, but under the action alternatives, the BLM will prioritize "[s]treams with a high intrinsic potential and high-priority populations."[1] Again, the lack of mention of key watersheds for the action alternatives leads us to deduce that the BLM is proposing to eliminate key watersheds. However, it is not the job of members of the public to deduce what the BLM plans to do here. Failing to explicitly describe which portions of the ACS will be retained, changed, or eliminated violates the BLM's duty to foster informed decision-making under NEPA.

[1] Similar vague references are made on page 740 regarding "instream restoration."

C. The DEIS fails to explain the environmental consequences of its proposal

NEPA "places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action." *Baltimore Gas & Electric Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 97 (1983) (internal citations omitted). The BLM has failed to consider and explain what the environmental impacts of its changes to the ACS will be, including both the difference between the no action and the action alternatives, and the differences between each action alternative. In particular, the NWFP FEIS, ROD, and BiOp, and FEMAT detailed why the ACS objectives and ACS components were essential to protect and restore aquatic ecosystems, and hence to comply with environmental laws including the Endangered Species Act. The BLM has failed to explain why these justifications are no longer valid or how any assumptions have changed.

Specifically, the BLM does not explain:

- *Why isn't elimination of the ACS by the BLM premature?* The BLM claims it can more precisely analyze impacts on aquatic habitat; presumably this is the agency's justification for eliminating the ACS. However, it is not possible for the BLM to accurately weigh the benefits of the ACS at this point such that it can justify eliminating the strategy. It will take many years for the strategy to work and for its effectiveness to be evaluated.
    - According to the NWFP BiOp, "the ACS is based on natural ecosystem recovery and disturbance processes and will take many years for results to be realizes." NWFP BiOp at 19. FEMAT explicitly stated that "it will require time for this strategy to work" FEMAT at V-30. Additionally, according to the NWFP ROD,

      > During the first several years, it is unlikely that the annual PSQ estimates shown in Figure ROD-1 will be achieved. Our decision represents a new strategy that involves new land allocations and a new set of standards and guidelines. It will take time for the land management agencies to develop new timber sales that conform with the planning amendments effected by our decision. NWFP ROD at 19.

      This statement alone indicates that it is not a surprise that PSQ targets have not been met since the NWFP was adopted.

    - The NWFP BiOp also stated:

      > The Aquatic Conservation Strategy must strive to maintain and restore ecosystem health at watershed and landscape scales to protect habitat for fish and other riparian-dependent species and resources and restore currently degraded habitats. This approach seeks to prevent further degradation and restore habitat over broad landscapes as opposed to individual projects or small watersheds. Because it is based on natural disturbance processes, it may take decades, possibly more than a century, to accomplish all of its objectives. NWFP ROD at B-9

- *What will be the impact of eliminating the ACS as a whole?*
    - According to the NWFP BiOp, "there is a direct correlation between the aquatic conservation measures embedded in the NFP ACS, and the biological requirements of Pacific salmonid species." NWFP BiOp at 40.
    - Furthermore,

> the NFP, if fully implemented (as described below), will ensure that ongoing and proposed Federal land management actions do not appreciably reduce the likelihood of survival and recovery of the anadromous salmonids by providing habitat of sufficient quality, distribution, and abundance to allow well-distributed populations to stabilize across Federal lands within the NFP area. To achieve this outcome, three requirements must be met: (1) the essential components of the NFP, including ACS objectives, watershed analysis, restoration, land allocations, and standards and guidelines, will be fully applied at the four spatial scales of implementation (region, province, watershed, and site or project); (2) management actions will comply with applicable land allocations and standards and guidelines; and (3) actions should promote attainment of the ACS objectives. NWFP BiOp at 12.

The BLM has not explained why the combination of all these issues is not equally critical to determine what the effects of the WOPR alternatives will be upon aquatic and riparian habitats. When the NWFP was devised, the effects of the proposed alternatives on aquatic and riparian habitats were determined to be:

> a function of:
> - the Riparian Reserve scenario adopted for intermittent streams outside Tier1 Key Watersheds
> - the amount of land allocated to Late-Successional Reserves
> - the amount of land in Key Watersheds
> - allocations of land contained within Key Watersheds
> - road mileage restrictions within Key Watersheds
> - restriction on road construction in inventoried roadless areas in Key Watersheds
> - amount of inventoried roadless areas in the matrix
> - the inclusion of a comprehensive watershed restoration program" SEIS at 3&4-80.

The BLM should be using these same factors to compare the differences between each of the action alternatives and the differences between the action alternatives and the no action alternative.

- Finally, according to Reeves et al. 2006 at 327 "The science emerging since the NWFP was developed supports the framework and components of the ACS, particularly for the ecological important of smaller, headwater streams."

- *What will be the impacts of eliminating the need to comply with ACS objectives?*
    - The NWFP made it clear that compliance with the ACS objectives was a critical aspect of the strategy.
    - According to the NWFP ROD, "[c]omplying with the Aquatic Conservation Strategy objectives means that an agency must manage the riparian-dependent resources to maintain the existing condition or implement actions to restore conditions." NWFP ROD B-10.
    - "The intent is to ensure that a decision maker must find that the proposed management activity is consistent with the Aquatic Conservation Strategy objectives." *Id.*
    - "Management actions that do not maintain the existing condition or lead to improved conditions in the long term would not "meet" the intent of the Aquatic Conservation Strategy and thus, should not be implemented." *Id.*
    - "The effects of individual proposed actions on listed, proposed, and candidate salmonid species addressed in this Opinion are generally predictable, however, because, by definition, they must be consistent with the ACS objectives. Compliance with these ACS objectives is not left to chance or to the discretion of individual land managers." NWFP BiOp at 24.
    - We incorporate by reference the answers from several scientists involved in the original development of the Northwest Forest Plan Aquatic Conservation Strategy to questions prior to the development of the SEIS that sought to "clarify" the ACS to eliminate the requirement that projects be consistent with ACS objectives. These answers were submitted to Joyce Casey in February 2003 and indicate that complying with standards and guidelines alone will not fulfill the intent of the Aquatic Conservation Strategy. Evaluating each project to determine whether it complies with the ACS objective is a separate, important aspect of the ACS.

- *If the BLM intends to designate riparian management areas in only timber management areas, and not in late-successional management areas, what will the impacts be upon aquatic ecosystems?*
    - As stated above, we do not believe that this is the BLM's intention. But if it is, the BLM must explain what the impacts will be in LSMAs where no RMAs are designated. What activities will occur in the area adjacent to streams that would not occur if RMAs were designated?

- *What will be the impact of eliminating riparian reserve buffers on unstable slopes*?
    - "Pursuant to the ACS, (and thus the NWFP), lands that are 'potentially unstable' must be designated and managed as Riparian Reserve[s]." Oregon Natural Resources Council Fund v. Goodman, No. 07-35100 (9th Cir. Sept. 24, 2007), at 13069.
    - The BLM has failed to explain what the environmental impacts of eliminating this protection will be.

- *What will be the environmental impacts of reducing riparian reserve widths?*

- One of the critical reasons that the NWFP expects to achieve 80 percent or greater likelihood of providing sufficient aquatic habitat to support stable, well-distributed populations of salmonids (see below) is because of the riparian reserve widths on intermittent streams; these are the streams for which the BLM is now proposing to make the greatest reductions of riparian reserve widths. The BLM must justify how such a drastic reduction in likelihood of supporting well-distributed populations is consistent with laws including the ESA, CWA, O&C Act and FLPMA.
- "The interim reserve widths for each type of waterbody were designed by aquatic scientists to optimize the cumulative effectiveness of the relevant riparian functions (e.g., shading, root strength, large wood recruitment, organic matter input, water quality, microclimate, etc.)" NWFP BiOp at 20. BLM must explain how it has taken into account all of these functions and their cumulative effects when determining new buffer widths.
- The BLM must explain how the impacts upon aquatic ecosystems will differ not only between the no action alternative and the actions alternatives but also between each action alternative. Claims that the impacts will be comparable are clearly unfounded because the widths differ greatly among each alternative.
- When the drafters of the NWFP proposed interim riparian reserve widths, they explained that these widths could be modified after watershed analyses were conducted. However, adjustments could only be made to riparian reserve boundaries if the modified riparian reserves would continue to assure protection of riparian and aquatic functions. Watershed analyses would ensure this protection by identifying critical hillslope, riparian, and channel processes. FEMAT at V-35.

  Since the adoption of the Northwest Forest Plan, the BLM and the Forest Service have conducted many watershed analyses across the project area for the WOPR proposal. These watershed analyses provide detailed information to explain the terrestrial and aquatic processes for specific areas. The BLM must consider this wealth of information, including scientific information, and explain how it supports BLM's proposed alternatives for WOPR. In particular, the BLM must explain the basis for widespread reductions in riparian reserve widths, when the watershed analyses provide no scientific support for these reductions.

  We have reviewed 53 watershed analyses for watersheds across the action area that contain lands managed by the BLM.[2] Almost half (24 out of 53) of these

[2] We reviewed the following watershed analyses: Althouse Creek, Applegate-Star/Boaz, Upper Bear Creek, West Bear Creek, Bull Run River, Calapooya Creek, Canton Creek, Collawash River, Crabtree Creek, Deer Creek, Drift Creek, Eagle Creek, Elk Creek-Rogue River, Elk River, Middle Evans Creek, East Evans Creek, Five Rivers-Lobster Creek, Gerber Reservoir, Grave Creek, Jenny Creek, Jumpoff Joe Creek, Klamath-River, Iron Gate Reservoir, Little Applegate River, Little Butte Creek, Little North Santiam, Lower Alsea River, Fish Creek, Lower Cow Creek, Lower South Umpqua River, Middle Applegate River, Middle North Umpqua River,

analyses were for watersheds designated as key watersheds, or for watersheds containing portions designated as key watersheds. These analyses therefore addressed areas that were particularly important to protecting aquatic species and water quality. In 19 of the evaluated watersheds the BLM manages at least 40% of the landscape, and in 33 of the analyses the BLM manages at least 20% of the landscape.

The reviewed watershed analyses do not support the contention that major reductions in riparian reserve boundaries are warranted. In fact, most of the watershed analyses support the contention that the interim riparian reserves should not be reduced at all. Specifically, only 2 of the watershed analyses were able to recommend riparian reserve width reductions with any specificity. Furthermore, these watershed analyses did not recommend reductions across the entire watershed, and one recommended increasing riparian reserve boundaries in certain areas. 30 of the watershed analyses either did not mention changing riparian reserve boundaries or suggested that interim riparian reserve boundaries should be maintained. Five of the watershed analyses indicated that the only modifications that should be made would be to increase riparian reserve widths. Finally, 16 watershed analyses discussed the possibility of modifying riparian reserve widths, but deferred any decisions until the project-level. In other words, they did not find that watershed analysis alone supported making riparian reserve reductions across the watershed. In fact, two of these analyses mentioned that riparian reserve widths might need to be increased after project-level analysis. See also Reeves et al. 2006 at 325 ("Only a very few watershed analyses . . . substantially adjusted the interim boundaries of the riparian reserves.)

Although we did not review all watershed analyses with BLM land in Western Oregon, the sample we did review gave us good reason to question the scientific basis for BLM's claims that the agency can still protect aquatic ecosystems even with drastically reduced buffer widths. Making these claims based upon the modeling in the WOPR DEIS is insufficient in light of the significant body of information contained in the watershed analyses. The BLM must address the impacts of reduced riparian reserves considering all relevant information available; the watershed analyses are particularly relevant considering that the agency itself produced many of these documents (the Forest Service was the main author for some).

- Recent science also supports maintaining riparian buffer widths.
  - For example, according to Everest and Reeves 2007 at 87: "We are unaware at this time of any evidence in the scientific literature that

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Middle South Umpqua, Myrtle Creek, Olalla Creek-Lookingglass Creek, Rock Creek, South Rogue-Gold Hill, Rogue River-Grants Pass, Rogue-Recreation Section, Wild Rogue North, Wild Rogue South, Salmon River, North Fork Silver Creek, South Umpqua River, Spencer Creek, Grayback/Sucker, Thomas Creek, Trail Creek, Trask River, South Fork Alsea, Upper Cow Creek, Middle and Upper Smith River, Upper Umpqua River, and West Fork Cow Creek.

supports modifying or retracting the original curves. The science produced since then (i.e., 1993) has supported the original assumptions and judgments used in developing the FEMAT curves (e.g., Brosofske et al. 1997, Gomi et al. 2002, Reeves et al. 2003)."

- And according to Everest and Reeves 2007 at 98: "There is no scientific evidence that either the default prescriptions or the options for watershed analysis in the NWFP and TLMP provide more protection than necessary to meet stated riparian management goals."
- Recent research on the effects of logging on headwaterstreams, such as work by Rashin et al. (2006) lends further support for the need for undisturbed forest buffers along all headwater streams, whether of intermittent, ephemeral or permanent flow. Rashin et al's work points to the fundamental failure of existing state and private forest practice rules—essentially the same as those proposed in the DEIS Alternative 2—to protect streams and rivers from sediment increases associated with logging disturbance. The DEIS utterly fails to disclose this known inadequacy and its physical and biological consequences.

- *What will be the impact of eliminating the standards and guidelines applicable to riparian reserves?*
  - As the NWFP ROD explains, "[s]tandards and guidelines prohibit programmed timber harvest, and manage roads, grazing, mining and recreation to achieve objectives of the Aquatic Conservation Strategy." NWFP ROD at B-17. The WOPR DEIS proposes to eliminate these standards and guidelines, opting for optional management actions and best management practices. The BLM has failed to disclose the environmental impacts that will result from this change.

- *How will the BLM provide effective refugia for aquatic species given the elimination of key watersheds?*
  - Why this must be explained: FEMAT stated that "Refugia, or designated areas providing high quality habitat, either currently or in the future, are a cornerstone of most species conservation strategies," and a "system of Key Watershed that serves as refugia is critical for maintaining and recovering habitat for at-risk stocks of anadromous salmonids and resident fish species, particularly in the short term, " FEMAT at V-46, and "[w]e advocate an approach to watershed and riparian ecosystem restoration that emphasizes protecting the best habitats that remain . . . found in watersheds termed 'refugia' or Key Watersheds." FEMAT at V-J p.1. Roadless areas, especially where otherwise undisturbed by activities such as logging or agriculture, are widely recognized to offer refugia for fish populations (Sedell et al. 1990, Trombulak and Frissell 2000). Even very small roadless areas of 1000 contiguous acres or less can confer refuge effects in mountain streams, where they associated with elevated abundance of native trout populations (Frissell and Carnefix In press, PDF attached). Headwater amphibians within the range of the WOPR are also sensitive to forest disturbance (Olson et al.

2007), and unlogged BLM lands offer islands of relatively undisturbed mature forest habitat for these species that could be critical to their persistence at river basin or regional scales. Such uncut BLM lands are often surrounded by heavily cutover BLM and private lands where amphibian populations are likely already depleted or depressed.

- Standards and guidelines from the NWFP prohibit the construction of new roads in roadless areas of key watersheds. The BLM must explain the impact of eliminating this standard on aquatic species. We recognize that the Clinton Roadless Rule currently prohibits such construction; however current litigation leaves the rule open to elimination; the BLM must therefore discuss what will happen if there is no roadless rule and the WOPR fails to prohibit new roads in roadless areas of watersheds formerly designated as key watersheds.
- According to the NWFP ROD, "Refugia are a cornerstone of most species conservation strategies. They are designated areas that either provide, or are expected to provide, high quality habitat. A system of Key Watersheds that serve as refugia is crucial for maintaining and recovering habitat for at-risk stocks of anadromous salmonids and resident fish species." NWFP ROD at B-18.
- Tier 1 Key Watersheds consist primarily of watersheds identified previously by the Scientific Panel on Late-Successional Forest Ecosystems (1991), and in the Scientific Analysis Team Report (1993). The network of 143 Tier 1 Key Watersheds ensures that refugia are widely distributed across the landscape. While 21 Tier 2 (other) Key Watersheds may not contain at-risk fish stocks, they are important sources of high quality water. *Id.* at B-18

- *What will happen to watershed analysis under the BLM's new plan?*
  - Under the ACS, "[w]atershed analysis will be an ongoing, iterative process that will help define important resource and information needs. As watershed analysis is further developed and refined, it will describe the processes and interactions for all applicable resources. It will be an information gathering and analysis process, but will not be a comprehensive inventory process. It will build on information collected from detailed, site-specific analyses." NWFP FSEIS at 2-18. What will the process be like under WOPR? Will there be ongoing updates to already existing watershed analyses? How will these differ considering that the BLM no longer intends to work towards ACS objectives?
- *How will the BLM's proposed watershed restoration strategy differ from the strategy set forth in the NWFP and what will be the difference in impacts?*
  - The NWFP sets forth a watershed strategy: "Watershed restoration restores watershed processes to recover degraded habitat." NWFP ROD at B-33
  - The NWFP provides much greater detail and commitment with regard to watershed restoration. It is, in fact, one of the four ACS components. The WOPR DEIS provides little mention of restoration, except for a few references to instream restoration and road decommissioning. Differing amounts of restoration could have very different impacts upon aquatic ecosystems. Therefore, the BLM must explain not only exactly what it is committing to do for each alternative, but also what the differing impacts will be between all four alternatives. A blanket

statement that instream restoration will be the same across all alternatives because for each alternative approximately 11 miles of instream restoration will occur annually is insufficient to meet impact disclosure requirements under NEPA.

- Figure 262 on WOPR DEIS p. 740 illustrates where high intrinsic potential streams are located relative to key watersheds. This figure demonstrates that eliminating key watersheds will eliminate important refugia, instead focusing on scattered areas across the landscape for restoration. The BLM must explain the impacts of switching from a restoration strategy focuses on large blocks of high value areas to a strategy focusing on widely distributed small areas of habitat.

- *How will changes to the reserves for late successional species reduce aquatic protections?*
  - Why this must be explained: FEMAT stated that while LSRs "were not derived for the Aquatic Conservation Strategy, they are an important component." FEMAT at V-32. Therefore, reductions in LSR acreage and management will have impacts upon aquatic ecosystems. The BLM has not addressed what those impacts will be.
  - According to the NWFP ROD,

    > Late-Successional Reserves are also an important component of the Aquatic Conservation Strategy. The standards and guidelines under which Late-Successional Reserves are managed provide increased protection for all stream types. Because these reserves possess late-successional characteristics, they offer core areas of high quality stream habitat that will act as refugia and centers from which degraded areas can be recolonized as they recover. Streams in these reserves may be particularly important for endemic or locally distributed fish species and stocks. NWFP ROD at B-12

  - According to the NWFP FSEIS,

    > Late-Successional Reserves will be managed to protect and restore habitat for late-successional and old-growth related species. While these reserves were not derived as part of the Aquatic Conservation Strategy, they benefit aquatic ecosystems. Late-Successional Reserves provide two major benefits to fish habitat and aquatic ecosystems. First, the standards and guidelines under which the reserves are managed significantly reduce activity in these areas, thereby reducing the risk of management-related disturbances and providing increased protection for all stream types. Second, because these reserves possess late-successional characteristics, they tend to be located in relatively undisturbed areas, although some management and natural disturbance events may have taken place in them. Some reserves offer core areas of high quality stream habitat that act as refugia in predominantly degraded landscapes and serve as centers from which degraded areas can be recolonized as they recover. Streams in the Late-Successional Reserves may be particularly important for endemic or locally-

> distributed fish species and stocks. NWFP FSEIS at 3&4-65; see also 3&4-195.

- According to the NWFP BiOp, "[t]he network of LSRs. . ., while established to provide habitat for terrestrial species associated with late-successional forests, also provide substantial benefits to Pacific salmonid in the form of protected habitat refugia." NWFP BiOp at 24.

- *How can the BLM justify the changes to the ACS and its components without evaluating the effects on specific aquatic species, as it did when it evaluated the NWFP alternatives?*
  - The NWFP relied on an Assessment Team that evaluated the effects of the various alternatives on seven races/species/groups of anadromous and resident salmonids:

    > In evaluating the alternatives, the Assessment Team considered five factors: (1) assessments of habitat conditions for the individual races/species/groups made by the assessment panel, (2) amount of Riparian Reserves and type and level of land management activity allowed within them, (3) extent of other reserves (such as Congressionally Reserved Areas and Late-Successional Reserves) and type and level of land management activity allowed within them, (4) presence of a watershed restoration program, and (5) management prescriptions within the matrix. NWFP FSEIS at 3&4-65.

    The BLM has not explained why these five factors are no longer highly relevant to determining what the impact of its proposed action alternatives will be upon these same salmonids. Furthermore, the BLM must justify including proposed alternatives that would have dramatic impacts on the projected future likelihood for fish habitat outcomes. Alternative 8 of the NWFP, which is comparable to BLM's alternative 2 for WOPR, was expected to have only 20-25% likelihood of achieving well distributed populations of coho, winter steelhead, sea-run cutthroats, and resident rainbow and cutthroat trout. All of these stocks had a least a 50 percent chance of becoming extirpated or restricted to refugia under this alterative. NWFP SEIS at 3&4-197. The current NWFP, on the other hand, is expected to have an "80 percent or greater likelihood of providing sufficient aquatic habitat to support stable, well-distributed populations of the seven salmonid races/species/groups evaluated." SEIS at 3&4-196.

  - *How will the action alternatives affect surrounding federal lands and what changes will need to be made on other federal lands to compensate for the decreased protections proposed in the WOPR?* As explained in the NWFP ROD: Alternative 9, like all of the other action alternatives, applies the same criteria for management of habitat on both Forest Service and BLM lands. This was done in order to accomplish most efficiently the dual objectives discussed above -- that is, achieving the biological results required by law, while minimizing adverse impact on timber harvests and jobs. The inefficiencies involved in applying different criteria on

> Forest Service and BLM land have been noted in previous analyses. For example, in the Report of the Scientific Analysis Team ("SAT Report"), the team found that BLM's plans were relatively high-risk, when compared to the plans of the Forest Service, in terms of conserving the northern spotted owl. As a result, the SAT found that *in order for the Forest Service to "make up for significantly increased risks," it would have to dramatically increase the size of protected areas on Forest Service land* (SAT Report, pp. 12-13). NWFP ROD at 26 (emphasis added)

D. The BLM has failed to explain how it will comply with federal law and legal requirements set forth in the NWFP

- *How do the proposed changes to the ACS comply with legal requirements under the O&C Act, the Endangered Species Act, the Clean Water Act, and other applicable federal law?*
  - Why this must be explained: the BLM already asserted in the NWFP ROD that the ACS complies with the O&C Act.

> The land allocations and standards and guidelines that are adopted here satisfy all of the objectives set forth by the President. They comply with the requirements of federal law, including the five statutes listed above [which include the Oregon and California Lands Act (O&C Act)]. They are based on the best available science and are ecologically sound. They will protect the long-term health of the federal forests. They will provide for a steady supply of timber sales and nontimber resources that can be sustained over the long term without degrading the health of the forest or other environmental resources. NWFP ROD at 3-4

  - The BLM has not explained why a change is necessary to meet the O&C act when it already stated that Option 9 "meets the requirements of laws directing the management of these forests for sustainable multiple uses, including the National Forest Management Act, the Federal Land Policy and Management Act, and the Oregon and California Lands Act." NWFP ROD at 28
  - The BLM must explain how reducing aquatic protections now could actually adversely impact the goals of the O&C Act. It has not explained why its prior rationale for adequate protections no longer stands:

> One of the purposes of the Endangered Species Act is the preservation of ecosystems upon which endangered and threatened species depend. A forward-looking land management policy would require that federal lands be managed in a way to minimize the need to list species under the ESA. *Additional species listings could have the effect of further limiting the O&C Lands Act's goal of achieving and maintaining permanent forest production. This would contribute to the economic instability of local communities and industries, in contravention of a primary objective of Congress in enacting the O&C Lands Act. That Act does not limit the Secretary's ability to take steps now that would avoid future listings and*

additional disruptions.
NWFP ROD at p. 50 (emphasis added)

- The BLM must explain how choosing an alternative that fails to reverse the trend of degradation and begin recovery of aquatic ecosystems will comply with relevant laws. The BLM is proposing alternatives that are more comparable to Alternative 7 and 8 of the NWFP than any of the NWFP's other alternatives, but according the NWFP SEIS: "all alternatives except 7 and 8 would reverse the trend of degradation and begin recovery of aquatic ecosystems and habitat on Federal lands within the range of the northern spotted owl." SEIS at S-13, 2-70, see also 3&4-200. Furthermore, according the SEIS, "based on the Riparian Reserves scenario and other components of the Aquatic Conservation Strategy, all of the alternatives, except 7 and 8, are expected to maintain or improve water quality." SEIS at S-14, 2-71. And, "The standards and guidelines for Alternatives 7 and 8 are not adequate to reverse the trend of aquatic and riparian habitat degradation and begin recovery of these habitats." SEIS at S-21.

- *The ACS and NWFP were analyzed and evaluated with regard to the overall cumulative impact of multiple conservation measures on the viability of native fish and other aquatic and riparian biota. How does the WOPR DEIS account for the cumulative effects of multiple-category dismantling of these protections?* The WOPR DEIS provides only a separate, disaggregated analyses of the effect of the alternatives on water temperature, large wood , sediment, and peak flows. However real fish populations that live in BLM-affected streams must experience each of these changes projected in the DEIS (plus several others not acknowledged in the DIES, see science reports attached). Nowhere can we find the DEIS addressing the net impact on fish, amphibians, and other aquatic life of these multiple impacts. The adverse biological effects of these multiple factors are at least additive, and in some ways they may be multiplicative, as when one class of impact increases sensitivity of streams or biota to a different category of impact. As a simple and common example, when increased sediment loads affect streams, they widen through bank erosion and later channel erosion. These channel changes reduce streamside shade and reduce stream depth, increasing exposure to sun and stream warming. The increase in sediment reduces the capacity of the stream to resist the warming that can be triggered by riparian logging; it also reduces the availability of thermal refugia for fish trying to cope with warmer waters. (See McCullough Temperature report, attached for discussion and citations). The DEIS thus fails to reasonably disclose the true biological impact of the action alternatives.

- *How will the BLM comply with the Memorandum of Understanding for Forest Ecosystem Management?*
  - Specifically, according the NWFP ROD,

    This decision amends current National Forest and BLM district plans as described in this Record of Decision. Amendments of forest or district plans that would modify the standards and guidelines or land

> use allocations established by this Record of Decision will be coordinated through the Regional Interagency Executive Committee and the Regional Ecosystem Office established by the Memorandum of Understanding for Forest Ecosystem Management (see Appendix E of the Final SEIS). Although decisions concerning implementation or modification of these standards and guidelines are subject to review by these interagency groups, the Memorandum of Understanding for Forest Ecosystem Management acknowledges the line authorities of individual agencies. NWFP ROD at 58.

- According to the NWFP FSEIS, "[d]ecisions to change land allocations, or standards and guidelines will be made only through the adoption, revision, or amendment of these documents following appropriate public participation, NEPA procedures, and coordination with the Regional Interagency Executive Committee." NWFP FSEIS at 2-15.
- The BLM claims that "[t]his plan revision does not seek to amend the Northwest Forest Plan, but to replace the Northwest Forest Plan land use allocation and management direction through plan revision." WOPR DEIS at 23. This explanation ignores the requirement above for coordination "to change land allocations, or standards and guidelines." NWFP FSEIS at 2-15. The BLM explanation of its "briefing" the Regional Interagency Executive Committee and working with cooperating agency is insufficient to explain how the BLM wil meets its requirement to coordinate with the Regional Interagency Executive Committee.

II. The BLM has overstated the role of and has improperly narrowly interpreted the O&C Act.

A. <u>The DEIS fails to consider an adequate range of alternatives; the purpose and need do not justify this limited range</u>

The BLM has only crafted action alternatives that significantly reduce aquatic protections. To comply with NEPA, it should have proposed action alternatives that increase aquatic protections maintain aquatic protections, and reduce aquatic protections. NEPA is designed to create informed decision making; in other words, the purpose is for an agency to consider the environmental impacts of different policy choices within its discretion, and then to make its decision. This does not mean that the agency must pick the environmentally preferable alternative. However, the agency cannot make a policy decision first, and then only consider alternatives that it believes will accomplish that decision.

The WOPR DEIS's stated "purpose and need for this proposed action is to manage the BLM-administered land for permanent forest production in conformity with the principles of sustained yield, consistent with the O&C Act." WOPR DEIS at XLIV, 3. The O&C Act states that O&C lands "shall be managed . . . for permanent forest production, and the timber thereon shall be sold, cut, and removed in conformity with the principal (sic) of sustained yield for the purpose of providing a permanent source of timber supply, protecting watersheds, regulating stream flow,

and contributing to the economic stability of local communities and industries, and providing recreational facilities." 43 U.S.C. § 1811a. Comparing the purpose and need with the Act, it is clear that the purpose and need is basically a restatement of the Act itself without restating the enumerated purposes.

The BLM has a reasonable amount of discretion in implementing the O&C Act; however, as stated above, the agency cannot decide in advance how it wishes to exercise its discretion and then develop only alternatives that meet that policy choice. Instead, it must address a variety of alternatives that would meet the requirements of the act. The District Court for the Western District Court of Washington has already determined that the NWFP complies with the O&C Act, and that was after considering the Ninth Circuit's *Headwaters v. BLM*, 914 F.2d 1174 (9th Cir. 1990). *Seattle Audubon Society v. Lyons*, 871 F. Supp. 1291 (W.D. Wash. 1994). The BLM's citation to *Headwaters* in footnote 1 does not, therefore, limit the alternatives that the BLM must consider. This is especially true because the court in *Headwaters* was not addressing aquatic protections and whether a certain level would be so great as to violate the O&C Act. The plaintiffs in *Headwaters* argued that the phrase "forest production" encompassed wildlife conservation in addition to timber production, and the court rejected that argument after stating that the primary use of O&C Act land is for timber protection only in that context. The O&C Act, however, specifically states that sustained yield principles are to be used to protect watersheds.

In light of the above discussion, maintaining aquatic protections comparable to those provided in the NWFP must be considered as an action alternative. If, as a matter of policy, the BLM wants to increase timber harvest levels, then it needs to go through the same type of exercise that the Forest Service and the BLM went through when they created the NWFP, i.e., develop a variety of alternatives that would produce a variety of timber levels and differing amounts of environmental protection that comply with all laws, and then choose the alternative that the BLM thinks would be best as a matter of policy.

B. <u>The BLM's interpretation improperly disregards the objectives of the O&C act</u>

As stated above, Congress passed the O&C Act to achieve certain purposes: "providing a permanent source of timber supply, protecting watersheds, regulating stream flow, and contributing to the economic stability of local communities and industries, and providing recreational facilities." 43 U.S.C. § 1811a. The WOPR DEIS states, "The BLM interprets this language of the O&C Act as explaining the rationale for sustained yield forest management rather than enumerating additional objectives for management." WOPR DEIS at 6, footnote 5. This interpretation is illogical. A more logical interpretation is that the language explains the rationale for sustained yield forest management *by* listing the specific objectives to be achieved (i.e. the objectives are not "additional" objectives, but they still must be considered by the BLM). As such, the BLM must demonstrate how the method of sustained yield forest management that it chooses to use will achieve the enumerated objectives including protecting watersheds, regulating stream flow, and contributing to the economic stability of local communities. As a matter of statutory interpretation, it is unreasonable for the BLM to treat these objectives as superfluous language that the BLM need to consider and address.

C. The BLM has not explained why its interpretation of the Act as set forth in the NWFP is no longer valid.

- According to the NWFP ROD, the

> O&C Lands Act requires the Secretary of the Interior to manage O&C lands for permanent forest production; however, such management must also be in accord with sustained-yield principles. Further, *that Act requires that management of O&C lands protect watersheds, regulate streamflow, provide for recreational facilities, and contribute to the economic stability of local communities and industries*. NWFP ROD at 49. (emphasis added).

- The NWFP ROD also states: "*Protection of watersheds and regulating streamflow are explicit purposes of forest production under the O&C Lands Act." Id.* at 50 (emphasis added). The BLM now claims that the law does not require the agency to meet these goals on O&C lands, asserting that the Act is just listing these goals as outcomes of managing for sustained-yield production. However, it fails to provide a thorough explanation for this interpretation. In fact, it relegates this interpretation to a footnote despite the potentially significant implications of this changed interpretation.

D. The BLM has failed to adequately address how it will provide for the economic stability of local communities and industries

As explained in the prior two sections, one of the objectives of the O&C Act is to "provide for the economic stability of local communities and industries." 43 U.S.C. § 1811a. Refer to the enclosed report by ECONorthwest entitled "Comments on the Draft Environmental Impact Statement for the Revision of the Resource Management Plans of the Western Oregon Bureau of Land Management Districts" for an explanation of how the DEIS fails to meet this requirement.

E. The settlement that led to the development of the WOPR DEIS does not require these drastic cuts in aquatic ecosystem protections

> The BLM has been conveying inaccurate information to the public concerning the settlement that led to development of this DEIS. Although the DEIS itself does not make these same misrepresentations, the BLM has again violated NEPA by limiting informed public participation through its contact with the media. Specifically, the BLM has vastly overstated extent to which the settlement agreement requires the BLM, as a matter of law, to choose from three environmentally damaging alternatives. In relevant part, here is what the settlement actually requires:
>
> 1. That the agency use its "best efforts to offer timber sales in an amount equal to the annual PSQ in the NWFP"

2. That the agency revise the Resource Management Plans by December 21, 2008, and, during that revision, that the agency consider at least one alternative that does not create any reserves beyond those needed to comply with a specific section of the ESA prohibiting the agency from jeopardizing listed species.

3. That all alternatives comply with the Oregon and California Lands Act (O &C Act) as interpreted by the 9th Circuit Court of Appeals.

Nothing in the settlement requires BLM to return to its timber production roots or releases the agency from the NWFP. In fact, it is demonstrably possible for the agency to achieve the Plan's annual sale quantities, but it has been thwarted by its habit of offering sales that don't comport with the Plan's current environmental safeguards. The BLM is causing this problem, not the NWFP. In fact the BLM states that in can in fact increase the annual sale quantity under the existing NWFP in its no action alternative from the 203 mmbf per year annual sale quantity that was declared as the allowable sale quantity in the 1995 resource management plans to 268 mmbf per year. WOPR DEIS at 566.

Furthermore, the BLM is free to choose a variety of other alternatives that continue to provide fish and wildlife protection comparable to the existing Forest Plan. The agency was only required to provide ONE alternative that might reduce reserves. The decision to provide three alternatives that reduce protections is the agency's policy choice -- not a requirement of the settlement.

Finally, the court has already has ruled that the NWFP complies with the O&C Act, as interpreted by the Ninth Circuit. There is nothing in the settlement that requires decreased environmental protection to achieve increased timber volume. The BLM never claims or admits in the settlement that the NWFP is inconsistent with the O&C Act. There are many true reasons behind the BLM's proposal to increase logging on its western Oregon lands. None of these reasons is a legal mandate.

III. The BLM's findings about the environmental impacts of its proposals are not based on sound (i.e. best available) science

BLM has an affirmative duty to rely on the best available scientific information to inform its analyses of the environmental impacts of its proposed alternatives, to fully disclose this information to the public, and to clearly explain the agency's reasoning, including justification of any choice to use a particular analytical method instead of other available, credible, relevant and appropriate analytical methods. The "best available science" requirement stems from both the ESA, which comes into play when NMFS and FWS produce biological opinions after consultation, and also from NEPA, which, although it does not use that exact phrase, nevertheless requires the BLM to disclose and discuss opposing scientific views at appropriate points. For example regulations specify that the BLM "shall make every effort to disclose and discuss at appropriate points . . . all major points of view on the environmental impacts of the

proposed action." 40 CFR § 1502.9(a). The BLM cannot fulfill this duty by selectively using or considering only those methods, analyses or information which the agency interprets to least constrain its management preferences – i.e., "cherry-picking" in common terminology. Yet, as the expert reviews (included herein) of BLM's aquatic impacts analyses make abundantly evident, BLM's analyses show a consistent pattern of doing exactly that.

Expert Reviews

PRC retained five recognized experts in the relevant subject areas (CVs documenting qualifications follow their individual reports) to evaluate the scientific accuracy and adequacy of BLM's analyses of impacts of its proposed alternatives on aquatic systems and species. These experts' reports address the sufficiency of the BLM's analysis with respect to the following key issues and find it lacking in key respects: stream temperature; sediment; hydrology/flow regime; and large wood recruitment to stream habitat (key findings of the individual expert reviews are briefly summarized after this bullet summarization of common themes in the reviews; the full expert reports follow these PRC comments).

The following common themes emerge from the experts' reviews:

- As just noted and in diametric opposition to the agency's duty to consider and objectively weigh all the relevant "best available science", BLM has instead "cherry-picked" only scientific information and analytical methods which it can interpret to support its preferred management options, omitting and ignoring a large body of science that either does not support or refutes BLM's assumptions, analyses and/or conclusions.
- Worse, BLM has not even consistently picked the information or method most favorable to the agency's preferred course of action from among a range of equally credible and reliable information and methods (i.e., legitimately exercised "agency discretion"). Rather BLM has in some cases chosen to rely on clearly flawed or less credible and reliable information/methods that produced the desired conclusions over more credible and reliable available information/methods that mitigated against those conclusions, as thoroughly documented in the expert reviews.
- The expert reviewers also noted BLM's heavy reliance on analytical models that had not been calibrated, their assumptions tested, or otherwise validated with real-world data (or at least, no evidence of such validation was provided in the DEIS).
- This serious flaw was further compounded by the absence of any plan for credible effectiveness monitoring, which could provide such validation or, in the alternative, allow adaptive management corrections in the event that modeled predictions proved inaccurate.
- Another consistent theme of the expert reviews was the failure by BLM to assess and disclose sensitivity and potential sources of error and uncertainty inherent in both its analytical methods and its data inputs; the compounding of such error and uncertainty through aggregation of analyses (e.g., output of one analytical process or model becomes input to the next); and the ramifications of these errors/uncertainties and their compounding for the conclusions resulting from the analyses (i.e., disclosing the level of

confidence in results/conclusions that is appropriate); all this despite the fact that such assessment and disclosure are standard scientific practice.

- Some DEIS analyses (e.g., peakflow predictions) or proposed management determinations (e.g., site-potential tree height "based on district averages that are measured at a scale that is no finer than the fifth-field watershed") are at inappropriate scales.
- Finally, the reviews indicated that insufficiency of BLM's proposed (reduced) protections for achievement of its stated aquatic management objectives (restore stream complexity; maintain and restore water quality; and maintain and restore the proper functioning condition of riparian and wetland areas to provide shade, sediment filtering, and surface and stream bank stabilization) is almost certain. This is because BLM underestimates adverse impacts of its proposals in numerous ways, including narrow focus on one or a few factors while ignoring other important, relevant factors.

Summaries of the Individual Expert Reviews of the WOPR DEIS Aquatic Impacts Analyses

A. Stream Temperature – Dale A. McCullough, Ph.D. Review of the Basis for Riparian Management Relative to Water Temperature Control in the USDI Bureau of Land Management (BLM) Draft Environmental Impact Statement (DEIS) for its Western Oregon Plan Revisions (WOPR).

Claims Regarding Maintenance of Stream Temperature are not Substantiated

The BLM's essential proposition is that the smaller, managed riparian buffers it proposes under Alternative 2 provide equivalent protection from solar heating of streams as do existing no-harvest buffers of 1 or 2 site potential tree-heights (150-300+ feet). This proposition is based on the assumptions that stream shading is the only relevant factor and that 80% effective shade is adequate on all sites.

Profound flaws in the sufficiency of the agency's analysis with regard to impacts on stream temperatures are discussed at length in the expert review conducted by Dale McCullough. (Enclosure). In sum, the BLM's findings that stream temperatures will be adequately maintained to protect aquatic life and meet water quality standards is based on "limited and selective view of riparian science," that "is heavily skewed toward consideration only of the shade function," despite other important factors determinant of stream temperature. (McCullough).

Key specific problems identified by McCullough include:

- The BLM relies heavily on a demonstrably flawed study, Brazier and Brown (1973), to support its temperature analysis.
- The BLM's narrow focus on the relationship of adjacent shade from riparian buffers to stream temperature ignores other significant factors and does not account for cumulative management effects on stream temperature.

- Conversely, by depending wholly on shade models to determine necessary buffer widths, the BLM's proposed riparian buffers fail to minimize disturbance to ecological processes important to the function of aquatic ecosystems;
- Failure to adequately protect headwater streams will lead to inadequate protection for perennial, fishbearing streams as well.
- The proposed riparian buffers, in addition to being inadequate on their face to maintain and restore water temperature regimes, are additionally compromised by the allowance for flexibility during implementation.
- The BLM's abandonment of that level of effective shade provided by "site potential" or "system potential" vegetation conditions as the agency's objective for riparian conditions substantially increases management-related risk to aquatic resources, is scientifically unjustified and does not comport with the existing, state- and federally-approved TMDL shade targets applicable to BLM lands.
- The BLM's proposed riparian management would allow significant degradation of riparian conditions, including reductions in existing levels of effective shade, that will have impacts on stream temperatures and aquatic biota.
- The USFS/BLM Implementation Strategy Evaluation upon which the BLM heavily relies does not provide a sound basis for the proposed riparian management, both because the Implementation Strategy Evaluation is itself flawed and because the BLM extends the faulty rationale of this document beyond its intended application.

B. Sediment – William E. Weaver, PhD and Danny K. Hagans, Pacific Watershed Associates. Analysis of Erosion and Sedimentation Issues in the Draft Environmental Impact Statement for the Revision of the Resource Management Plans of the Western Oregon Bureau of Land Management *(see citations in Weaver-Hagans expert review enclosed herein)*.

Sediment is one of the key management-caused discharges affecting both water quality and aquatic habitat that will occur under each of the proposed WOPR alternatives. However, key elements that would be necessary in order to fully evaluate the effects and impacts of the proposed alternatives on erosion and are missing from the DEIS. In addition, much of the specific proposed implementation guidance for managers in the form of BMPs is incorrect, unrealistic, too vague to be useful, or otherwise inadequate to accomplish the aquatic protection claimed. Among the most important flaws of the DEIS analysis:

1) The DEIS conclusion of only slight sediment increases from the proposed action alternatives rests entirely on comparing the impacts of proposed new roads against the continuing impacts of the current road system, making the additional impacts seem minuscule in comparison. This is a flawed analysis that seeks to maintain the status quo, even in watersheds that have degraded water quality, reduced aquatic habitat and listed salmonid species. Use of the existing road network is an integral part of the actions proposed in the DEIS, and each of the four alternatives depend heavily on its use and existence. The existing road network, and the impacts associated with it, cannot reasonably be excluded from the environmental analysis and from the management objectives and management actions that are proposed in the plan. We can infer that how much of the existing road network is required to execute the plan, to what standard the

network is to be maintained, and how heavily it will be used natives must vary across alternatives based on differences in logging, but neither such differences of road network construction, use and condition, nor their environmental effects, are addressed in the DEIS.

2) Road decommissioning and "road improvement" are forwarded as mechanisms to counter-balance the increases in fine sediment discharges that will accompany the construction of new roads. However, the sole criterion specified to identify a road for decommissioning is not related to ecological benefit that could be gained by its removal, but solely that it "is no longer needed for management purposes" (DEIS, 795). The concept of "road improvement" is not defined, and there are no management objectives, management actions, BMPs or specifications listed or described for this type of work. There is not any prior professional convention to define this term. As a proposed mechanism to offset the adverse effects of new road construction, "road improvements" could potentially offer a substantial opportunity for watershed restoration and protection, but this has not been specified in the DEIS. Likewise, there is no explicit plan for prioritizing and implementing road upgrading ("stormproofing") and hydrologic disconnection from streams of roads that are retained on the landscape for maximum reduction of their acknowledged adverse impacts to water quality and aquatic species.
3) BMPs are "assumed to maintain or improve water quality" (DEIS, LXII) but no quantitative goals for water quality improvement or reduced sediment discharges have been forwarded for any of the four alternative resource management plans.
4) The explicitly stated uncertainty in the management actions (roads will be located outside of stream influence zones <u>where possible</u>) and environmental consequences (<u>mostly likely</u> will not deliver sediment; BMPs <u>are assumed</u> to improve water quality) casts serious doubt on the ability of the management actions to attain narrative target conditions (e.g., maintained or improved water quality) that have been described.
5) Due to numerous wrong, invalid, questionable or unsupported assumptions and overlooked or underestimated road- and management-related factors contributing to erosion and sedimentation, the DEIS analyses almost certainly significantly underestimate both ongoing sediment delivery from current management and that predicted from management proposed in the action alternatives.

<u>Deficiencies in management objectives and actions</u>:

1) <u>Wildfire</u> - There are no management objectives or management actions proposed for post-fire watershed restoration. One of the greatest environmental risks associated with the post-fire period is from increased erosion and sediment delivery originating from forest road systems, yet no management actions have been identified to address this threat.
2) <u>Generation of sediment by use of roads for log hauling</u> - The plan alternatives are silent on the expected effects of increased commercial truck traffic on the forest road system, and on the consequent increases in fine sediment discharges, as harvests are ramped up from current levels. Increased traffic on forest roads generates elevated levels of fine sediment that is delivered to stream channels through hydrologically connected road reaches. All these effects <u>unnecessarily</u> threaten downstream water quality and aquatic

habitat, and they are simple and straightforward to proactively treat in the context of watershed management and restoration. In spite of this, there are no listed management objectives or management actions that have been prepared to deal with these predictable and avoidable effects.

3) Fish and fish habitat – A generalized objective of the plan's alternatives is to increase habitat complexity, yet there are no management objectives or management actions proposed for the equally important tasks of providing increased habitat protection from upland sediment sources which can chronically or catastrophically threaten habitat quality and complexity. Fish habitat protection and restoration is not done just within the bounds of the stream channels where fish live. It comes from a watershed-wide effort to identify and treat chronic and episodic threats to fish-bearing streams and the tributary channels that supply them with quality water and food. This focused watershed-wide protection and restoration plan is missing from the three resource management action-alternatives. Roads are widely recognized as the primary source of fine sediment that impairs fish habitat in streams in the planning area.
4) Water - Water quality restoration is an explicitly stated objective of all the plan alternatives (DEIS, 57). The DEIS states that "road improvements" and the decommissioning of roads near streams would outweigh the <1% predicted increase over current levels of sediment delivery from the existing road system. Nowhere is there a plan with targets and mileposts for achieving water quality objectives. In fact "Road Improvements" remain undefined and unexplained. Best management practices listed in the appendices of the plan would be implemented to meet water quality standards, but there is no proposed plan from which the BMPs can be prioritized, selected and focused to appropriate and effective locations. They are simply a list of techniques without a purposeful plan by which they can be implemented. Nowhere do the alternatives address and provide for a plan with clearly stated objectives and measures proposed for water quality restoration and the reduction of water quality impacts from the existing and newly constructed road system. The DEIS states that there will be less than a 1% increase in sediment delivery as a result of implementing the proposed road construction in the WOPR. In contrast, a road restoration plan could address and specifically deal with the other 99+% of the road-related sediment impacts that are presently occurring on the BLM road system, as well as mitigating the impacts that new road construction will have. Without the development a specific water quality protection and treatment plan for the existing and extensive road network, the current Plan alternatives do not accomplish the DEIS management objective of maintaining and restoring water quality. In fact, without a rigorous prioritization and implementation plan, there is every reason to anticipate that the proposed measures will not be effective at attaining the benefits claimed in the DEIS.
5) Other – As stated in the DEIS (63), "Roads, maintenance yards, buildings, quarries, and other facilities also do not have specific management objectives or management actions but would be managed for the purpose for which the facilities were constructed." The lack of management objectives and management actions for roads and quarries and various other development sites is a serious omission of the DEIS and the plan alternatives. These activities are likely to be among the largest sources of human-caused erosion and sediment delivery in many of the watersheds, planning areas and districts. Failure to address these sediment sources through specific (quantitative) management

objectives and associated sediment control actions is a fatal flaw in the proposed plan and the listed alternatives. Although the focus of the plan is on timber management and production, the failure of the plan alternatives to address water quality restoration and aquatic protection through the implementation of proactive management measures, especially for the existing forest road system, is a serious and unnecessary omission.

6) RMA sediment filtering and protection from mass wasting - Reduction of riparian management areas in all three action alternatives by 50% or more over the no action alternative is in conflict with the stated objective of maintaining or restoring water. The resulting RMA widths and associated equipment exclusion zones are so narrow as to be generally less than that which has been shown to result in effective sediment filtering. The across-the-board reduction in proposed RMA widths would also functionally reduce the capacity of the RMA to buffer the stream from harvest-related mass wasting on the steep sideslopes to streams. Decreased riparian widths can also be expected to contribute to increased blow-down in the narrower RMAs, increasing soil disturbance and mass wasting potential on steep inner gorge slopes. The DEIS does not mention or analyze the effects of the predictable impacts of reducing the RMA width on shade (stream temperature), sediment generation (from blow down), sediment filtering, and protection of the stream and water quality from accelerated mass wasting in the streamside zone. Variable RMA widths for steep slopes and unstable slopes are common in forest practices but the DEIS provides no such protection. This is a serious oversight that will minimize the effectiveness of the RMA as a sediment buffer and filter strip. RMA filter strips as narrow as those listed in the Table 31 (equipment exclusion of 25 feet) are not supported by the literature. The 25 foot undisturbed buffer (as proposed in the DEIS Alternatives 1 and 3) is not sufficient to block sediment movement into adjacent streams (DEIS, 380). Alternative 2 excludes ground-based harvesting equipment but provides only 12 conifer trees per acre retention in its 25-foot "buffer" for intermittent, non-fish-bearing streams, equivalent to a single row of trees spaced 145 feet apart, on average (DEIS, 80, 731). A conservative and realistic RMA width of no less than 100 feet of undisturbed slope should be employed to provide a filtering buffer against sediment eroded and transported from upslope areas, whether it originates from diffuse sources along roads or from disturbed sites on adjacent logged hillslopes. The minimal undisturbed RMA widths in the DEIS (Table 31) are not suitable for protecting streams from sediment derived from either bare soil areas or from roads located within several hundred feet upslope of the RMA. None of the action alternatives provide suitable filter widths to protect streams from erosion caused by logging disturbances along the upslope side of the RMA.

7) Debris-flow prone headwalls and channels - Increased levels of harvest and reduced RMA widths and protections, compared to the current "no action" measures contained in the Northwest Forest Plan, must be assumed to result in accelerated sediment production and delivery to steams in the Plan area. For these reasons all Plan alternatives must contain provisions for the identification and protection of debris-flow-prone headwalls and channels.

8) Intermittent and Ephemeral Non-Fish-Bearing Streams - Small streams are the conveyor belts that feed sediment downstream to larger fish-bearing streams and rivers with multiple beneficial uses. A watershed's stream network is integrated and highly connected and what happens high in the stream system eventually works its way

downstream to larger and more biologically productive and diverse. Non-fish-bearing streams play a vital role in delivering clean, cool water and food materials to fish-bearing streams lower in the watershed. For this reason, they require protection from the adverse effects of management and soil disturbance. The DEIS proposes only limited and inadequate protection for non-fish-bearing intermittent/ephemeral streams.

C. Hydrology (Peakflows/Flow Regime) – Jonathan J. Rhodes
Conservation Hydrologist. Review of Stream Flow Analyses in the USDI Bureau of Land Management (BLM) Draft Environmental Impact Statement (DEIS) for its Western Oregon Plan Revisions (WOPR).

BLM's analyses of the streamflow impacts from its proposed alternatives are fatally flawed and scientifically inadequate on numerous grounds: The agency omitted relevant, credible and available science; it used the wrong scale when analyzing peak flow impacts; it focused too narrowly on single processes, ignoring other relevant ones; and its analysis is not transparent as to sources of potential error and uncertainty, nor are the ramifications of this inherent error and uncertainty analyzed or disclosed. Given the significant impacts that altered peak flows have on aquatic ecosystems and species, these defects render the DEIS scientifically inadequate with respect to aquatic resources.

Management effects on peakflows are a significant issue within the analysis area of the DEIS for several reasons. Scientific assessments have repeatedly concluded that management effects on watershed-scale hydrology and peakflows affect aquatic conditions that strongly affect salmonid populations (USFS et al., 1993; Murphy, 1995; Spence et al., 1996). Studies have repeatedly demonstrated that logging and roads cumulatively elevate peakflows, especially in smaller watersheds.

Elevated peakflows have numerous negative impacts on stream conditions and processes, including increased sediment transport, bank erosion, channel scour, and sedimentation of downstream salmonid habitats. Elevated peakflows also contribute to channel widening, which contributes to increased summer water temperatures. High summer water temperatures are already a widespread problem for salmonid populations within the DEIS analysis area.

Proposed logging levels vary considerably among the alternatives analyzed in the DEIS. Hence, effects of the alternatives on peakflows will also vary among the alternatives, because logging and associated activities elevate peakflows. However, the DEIS failed to reasonably analyze and disclose the impacts of the alternatives on peakflows due to several defects in the analysis. These deficiencies include the following:

- The DEIS failed to use the results of Grant et al. (2007) which found that forest canopy removal of more than about 20% of watershed area elevated peakflows generated by rain-on-snow.
- The DEIS did not analyze the impacts of the existing conditions and the alternatives at scales where peakflow impacts are most pronounced and ecologically significant.

- The DEIS's analysis narrowly focused on the effects of forest canopy removal on peakflows and ignored other important causes of peakflow elevation, including cumulative soil compaction from roads, logging, and grazing, and the acceleration of runoff routing by roads.
- The DEIS's analysis is fraught with potential error, yet the DEIS failed to assess and disclose the likely magnitude and implications of potential individual errors, nor those resulting from combining or compounding of error in the analysis, although this has long been standard scientific practice.

Each of these defects contributes to underestimation of the magnitude, extent, and significance of existing peakflow elevation within the analysis area under existing conditions. This is significant because impacts to already damaged systems can be considerably different and more ecologically serious than those in systems that have not been impaired (Reid, 1993; Dunne et al., 2001).

Each of the aforementioned deficiencies also contributes to underestimation of peakflow impacts under the alternatives. These defects also have a combined effect that contributes to underestimation of the magnitude, extent, and significance of peakflow impacts under the alternatives. Therefore, the DEIS fails to adequately differentiate among the alternatives in terms of their effects on peakflows. Based on available information, it is highly likely that the action alternatives will elevate peakflows to a significantly greater degree than forecast in the DEIS. Because peakflows influence a host of aquatic conditions, the DEIS's failure to reasonably analyze and disclose peakflow impacts also causes the DEIS to fail to reasonably differentiate among the alternatives with respect to their impacts on aquatic habitat conditions and salmonids.

The foregoing defects in the DEIS's analysis of peakflows need to be rectified. The FEIS must analyze and disclose:

- All cumulative sources of peakflow elevation under existing conditions and the alternatives, including their extent and severity within the analysis area at scales where impacts are likely to be most pronounced;
- The uncertainties and other limitations inherent in the analysis approach, and their implications for accuracy and ecological consequences;
- The potential accuracy of the analysis, including its expected error, and their ramifications.

Finally, low flows can also be reduced by the cumulative effects of management activities on BLM lands throughout the analysis area. Reductions in low flows negatively impact aquatic habitat conditions and salmonids. However, the DEIS is without any reasonable analysis of the cumulative management-induced impacts on low flows under existing conditions or the action alternatives. This significant defect must be rectified by taking a hard look at all sources of impacts to low flows and their cascading effects on aquatic conditions and salmonids.

D. Large Wood Recruitment – Neil Lassettre, PhD, Ecologist/Geomorphologist and Stephen C. Ralph, Senior Aquatic Ecologist, Stillwater Sciences. Review of LWD recruitment model used within NEPA Draft Environmental Impact Statement (DEIS) for the Revision of Resource Management Plans of the Western Oregon Bureau of Land Management Districts.

At PRC's request, Lassettre and Ralph focused their review on the DEIS's application of a large woody debris (LWD) recruitment model to predict effects of proposed management on aquatic habitat and populations. These reviewers concluded:

> [B]ased upon a review of the assumptions and outputs, the model supports the conclusions presented in the alternatives, but the analysis and subsequent discussion do not address the following, potentially important, items:

1. LWD recruitment process rates likely differ by physiographic province, and this could affect the magnitude of the effects, including differences among the alternatives, both physically and biologically, in ways that are not addressed in the DEIS.

2. Critical model assumptions, construction, and validation are not addressed specifically:

    a. Current large wood condition, riparian characteristics, and stocking data across streams within the managed districts are poorly described or altogether absent.

    b. Delivery of large wood via debris flows may underestimate wood input under current and future conditions.

    c. Sensitivity analysis of model parameters (e.g., fish productivity vs. habitat relationships) is not presented, nor evaluated systematically through monitoring.

    d. There appears to be no sensitivity analysis of the numeric values chosen for any of the various key model parameters. This information is critical to understanding the merits and consequences of model predictions, even more so when several models are used together in ways that can compound their strengths and weaknesses. The choice of assigning a single value to a metric can have significant consequences on the reliability of their predictions. For example, which of the metrics within each model had the most influence on the predictions? How were values chosen for each of these metrics? Were model runs made using alternative values, or range of values, that represent natural variability? Are these results available and do they predict markedly different model predictions for the alternatives considered? A case in point: the range of values for habitat vs. coho smolt production observed throughout their distribution is highly variable both geographically and from year to year. If geometric mean values alone were used as model input values it might result in erroneous assumptions of key relationships and ecological outcomes. Mean values alone do not adequately account for natural variability in the expression of key metrics, and may introduce error in to model predictions that simply are not realistic or conservative from a resource protection standpoint. Using alternative statistical tools, such as the coefficient of variation as alternatives for these metrics, would add to a sense of the statistical rigor of the model predictions (see Conquest 1983).

As described in the DEIS, and elaborated on above, future provisions for monitoring and adaptive management appear wholly inadequate to justify blind application of these models.

Role of the Science Advisory Team (SAT) Unclear. There is no evidence that the BLM's interagency, interdisciplinary Science Advisory Team has played a significant role in the development of the alternatives or the effects analysis. It is our understanding that the Team charter states that it will review draft effects assessments with respect to four questions: (1) "Was all the relevant scientific information considered?" (2) "Were all the significant assumptions acknowledged?" (3) "Were risks adequately and fairly documented?" And (4) "Are conclusions consistent with known science?"

Where is the SAT's review cited or otherwise acknowledged in the DEIS? No such review has been released to the public, despite requests. *See e.g*. Mary Scurlock, Personal E-mail Communication with Alan Hoffmeister, 12/20/2007, reply to request made for SAT comments, 12/05/2007. Information requests from PRC prior to DEIS release to clarify the involvement of the science team resulted in materials with large portions of content omitted, so we remain unclear about the relationship that actually played out between managers' work and the Team's. May 25, 2007 Response of Kathy J. Eaton, Acting Associate State Director, to FOIA No. OR-2007-086 and May 18, 2007 Response of Kathy J. Eaton. The materials we do have indicate that there has been discussion about whether the science team was sufficiently involved with managers' work on the alternatives and effects analysis, but items of interest such as the letter from John Cissell, former Science Team Coordinator, conveying "the following points" to the WOPR Steering Committee dated March 7, 2007 and the document entitled "Science Team Role Pre-DEIS 3-07" were provided to us devoid of content. (Although we did not appeal this decision due to competing priorities, we urge BLM to revisit its questionable position that such materials are not discoverable by the public pre or post decision).

We admonish the BLM that it is of great interest and relevance to the public what its science advisors, presumably compensated by the taxpayer, are telling it about this proposal. We suspect that the Team has been relegated to making comments more or less at the DEIS stage, along with the public. We suggest that this input is highly relevant to the public's understanding of this proposal and no final decision should issue without the public having an opportunity to review both the SAT's input and any changes that may be made on the basis of their review. We are encouraged that the Science Team's response to science-related questions during public input is intended to be included as an appendix to the Final EIS, but this alone is not sufficient to disclose the Team's input

IV. The BLM has not demonstrated a basis to find that the any of the alternatives will comply with the Clean Water Act (CWA)

The BLM has not demonstrated that the proposed deviations from the Northwest Forest Plan and its ACS will provide reasonable assurance of compliance with Clean Water Act requirements, including numeric and narrative water quality criteria, relevant targets in Total Maximum Daily Loads (TMDLs), presumptions against degradation and the full protection of beneficial uses. The agency's analysis of impacts on freshwater ecosystems is profoundly flawed and is based on

a failure to recognize the full extent of the BLM's obligation to prevent degradation of water quality, particularly in smaller and non-perennial water bodies. These comments and supporting expert reports identify numerous respects in which the BLM's findings that water quality will be adequately protected by the proposed management do not have a rational basis.

Temperature, sediment and large wood regimes are key aspects of water quality impacted by forestry. McCullough, 2008, "Review of the Basis for Riparian Management Relative to Water Temperature Control" (140 pp) (enclosed), finds that the BLM's proposed riparian management would allow significant degradation of riparian conditions, including reductions in existing levels of effective shade, that will have impacts on stream temperatures, fish, and other aquatic biota. BLM's findings that stream temperatures will be adequately maintained to protect aquatic life and meet water quality standards is based on a limited, selective view of riparian science that is heavily skewed toward consideration only of the shade function despite other important factors determinant of stream temperature.

The enclosed Weaver & Hagans Report, "Analysis of Erosion and Sedimentation Issues in the Draft Environment Impact Statement for the Revision of the Resource Management Plans of the Western Oregon Bureau of Land Management Districts" (49 pp) finds numerous issue related to sediment analysis and the absence of a clear, credible plan to reduce existing high levels of sediment from the BLM roads system which threaten beneficial uses. Shockingly, 5100 miles (36%) of the 14,275 miles of existing BLM road within the Plan area have been judged to deliver fine sediment directly to the stream network and even the conservative BLM sediment model has estimated this to mean that in excess of 60,000 tons of fine sediment is delivered to rivers and streams every year. Weaver & Hagans at 15.

The Stillwater Science Report, "Review of LWD Recruitment Model," (71 pp.)(excluding figures) questions the DEIS findings that the proposed alternatives will not adversely impact large wood and fish productivity, which are closely tied to salmonid-related beneficial uses. The DEIS analysis and findings on these issues is weak for a number of reasons, including: (1) actual field data on current conditions of instream habitats or LWD loading is not used to validate model outputs; (2) there is no sensitivity analysis of modeled outputs; (3) differences in baseline conditions are assumed to have no impact, yet are known to be extremely variable; (4) monitoring and adaptive management are inadequate.

A. <u>Scope of Clean Water Act is broad and extends to impacts on all waters that are hydrologically or biologically connected to navigable' or other waters of the US, directly or indirectly</u>

The purpose of the Clean Water Act is "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1252(a). Each factor listed above protects waters important to achieving the goals of the Act and the agencies should continue to protect waters based on these factors.

All waters that are hydrologically or biologically connected to navigable or other waters of the United States are protected by the Act. Water quality standards extend to seeps, springs, wet meadows, and wet areas, recognizing the importance of these aquatic features to the aquatic

ecosystem. While adjacency of a stream or wetland to a navigable water body would indicate a very high likelihood that management of such stream or wetland would affect that navigable water body, lack of adjacency certainly does not indicate the converse. Examples of protected waters y way of direct or indirect hydrological connection to navigable or other waters of the US include:

a) streams that flow intermittently, ephemerally, in the sub-surface, or through human made conveyances;
b) all wetlands that discharge to groundwater that later flows into a navigable stream, and wetlands that are discharged to from groundwater which is hydrologically connected to navigable waters
c) wetlands within the 100-year flood plain of a navigable water
d) the hyporheic zone of any navigable water or one of its tributaries[3]
e) groundwater

These aquatic areas have the ability to influence important attributes of the waters that they are connected to, including nutrient, sediment and other pollutant loading, stream temperature, flow maintenance and fish and amphibian habitat.

B. Duties Specific to Federal Agencies under the Clean Water Act

The Clean Water Act is very clear that federal agencies are required to meet pollution control requirements, including state water quality standards. Federal agencies "having jurisdiction over any property or facility, or . . . engaged in any activity resulting, or which may result, in the discharge or runoff of pollutants . . . shall be subject to, and comply with, all Federal, State, interstate and local requirements, administrative authority, and process and sanctions respecting the control and abatement of water pollution in the same manner, and to the same extent as any nongovernmental entity . . . the preceding requirement shall apply to any requirement, whether substantive or procedural." 33 U.S.C. §1323.

Total Maximum Daily Loads (TMDLs) watershed- and pollutant-specific restoration plans for waters that do not meet water quality standards. The essential function of a TMDL is to set a loading capacity for a particular pollutant (e.g. solar heating; turbidity), accounting for seasonal factors, "critical conditions" and a margin of safety to compensate for uncertainty. The portion of an overall loading capacity allocated to types of nonpoint source dischargers – such as forestland managers - is determined through the description of load allocations. TMDL load allocations clearly fall under the heading of the water quality requirements that the Act contemplates are enforceable as against federal agencies.[4]

[3] "One of the most overlooked components of a stream and its valley is the hyporheic zone, the area of flow beneath the surface of the stream bed (Stanford and Ward 1988; Bencala 1993). In alluvial valleys, the hyporheic zones may extend several meters below the channel bed, as well as a kilometer or more laterally." Spence et al. , B. C., G. A. Lomnicky, R. M. Hughes, and R. P. Novitzki. 1996. An ecosystem approach to salmonid conservation. TR-4501-96-6057. ManTech Environmental Research Services Corp., Corvallis, OR. (Available from the National Marine Fisheries Service, Portland, Oregon), at §3.8.

[4] *See e.g*. Steve Mashuda, Water Quality Standards: A Primer. November 2002.

C. Key Aspects of Water Quality Affected by the WOPR

Section 303 of the Act protects beneficial uses of regulated waters. Water quality is critical to maintaining beneficial uses including agricultural, industrial, domestic and municipal water supplies, recreation, power generation, and maintaining populations and habitat of salmon and other aquatic organisms.

1. Importance of non-perennial waters

Attainment of §303 water quality standards cannot be meaningfully discussed without reference to the condition of headwater streams, many of which exhibit only seasonal flow, and wetlands. Intermittent streams play an important role in storing and processing organic materials, later transporting the products downstream.[5] Intermittent streams also store sediment, later providing it to larger streams.[6] Wetlands contribute to meeting water quality standards by accumulating nutrients, trapping sediments and pollutants, and transforming substances.[7] Hydrologic pathways such as precipitation, surface runoff, groundwater, tides, and flooding rivers transport energy and nutrients to and from wetlands.[8] Additionally, by reducing flood flow amounts and velocities, wetlands reduce erosion.[9] Because wetlands receive, store, and release water in various ways, including through contact with ground water and surface water,[10] filling or discharging pollutants to wetlands can have water quality impacts in other parts of a watershed.

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[5] FEMAT (Forest Ecosystem Management Team). 1993. Forest ecosystem management: an ecological, economic, and social assessment. Report of the Forest Ecosystem Management Assessment Team. U.S. Government Printing Office 1993-793-071. U.S. Government Printing Office for the U.S. Department of Agriculture, Forest Service; U.S. Department of the Interior, Fish and Wildlife Service, Bureau of Land Management, and National Park Service; U.S. Department of Commerce, National Oceanic and Atmospheric Administration and National Marine Fisheries Service; and the U.S. Environmental Protection Agency, at V-36.

[6] *Id.*

[7] *See e.g.* National Research Council, Committee on Characterization of Wetlands. 1995. Wetlands: Characteristics and Boundaries, at 31, *citing* Mitsch, W.J., C.L. Dorge, and J.R. Wiemhoff. 1979. Ecosystem dynamics and a phosphorus budget of an alluvial cypress swamp in southern Illinois. Ecology 60:1116-1124; Lowrance, R.R., R.L. Todd, and L.E. Asmussen. 1984a. Nutrient cycling in an agricultural watershed, I. Phreatic movement. J. Environ. Quality 13:22-27; Lowrance, R.R., R.L. Todd, J. Fail, O. Hendrickson, R. Leonard, and L. E. Asmussen. 1984b. Riparian forests as nutrient filters in agricultural watersheds. BioScience 34:374-377; Whigham, D.F., C. Chitterling, and B. Palmer. 1988. Impacts of freshwater wetlands on water quality: A landscape perspective. Environ. Mgmt. 12:663-671; aulkner, S.P., and C.J. Richardson. 1989. Physical and chemical characteristics of freshwater wetland soil. Pp. 41-72 in Constructed Wetlands for Wastewater Treatment, D. A. Hammer ed. Chelsea, MI: Lewis Publishers; Johnston, C.A. 1991. Sediment and nutrient retention by freshwater wetlands: Effects of surface water quality. Critical Reviews in Environmental Control. 21:491-565; and FEMAT 1993 (*see* supra note 14), Appendix V-E, *citing* National Research Council, Committee on Restoration of Aquatic Ecosystems. 1992. Restoration of Aquatic Ecosystems. National Academy Press. 552 p.

[8] Mitsch, W.J., and J.G. Gosselink. 2000. Wetlands. John Wiley & Sons, New York. 920 pp.

[9] *Id.*

[10] Wetland Functions and Values Training Module, EPA. On the web at: http://www.epa.gov/watertrain/wetlands/text.html

Failing to protect from management-caused degradation all waters that are hydrologically connected to "navigable" or other waters will, in some cases, result in the "discharge of pollutants"[11] and failure to meet water quality criteria and fully protect beneficial uses.

2. Sediment and watershed processes

Any forest practice that disturbs the surface of the soil will increase the likelihood of surface erosion through several mechanisms. First, compaction of the surface and subsurface soil horizons reduces both the total pore space (porosity) and the mean pore diameter. This reduces the amount of water-holding capacity and the infiltration rate (Everest, et al., 1987; Spence, et al., 1996) while increasing the soil bulk density (Froelich, 1988) and strength (i.e., makes it a better construction material but a worse growth medium). These conditions increase the likelihood of saturation (occurs in smaller precipitation events) and lengthen the period of saturation during the water year. This increases the likelihood of saturation overland flow (Dunne and Leopold, 1978). It may in many cases reduce the infiltration capacity of the soil to less than expected rainfall rates causing Horton overland flow to occur (Dyrness, 1967). This has been shown to increase the potential for surface runoff or overland flow (e.g., Purser and Cundy, 1992). Runoff over bare soil such as might exist on a skid trail or cable haul path is likely to cause surface erosion.

Second, removal or displacement of the litter and surface soil horizons exposes the subsoil which is almost always less porous and often less cohesive. The exposed soil and compacted conditions create the perfect scenario for surface erosion. This is common on skid trails or cable log paths within cut units (e.g., Johnson and Beschta, 1980; Fredricksen and Harr, 1981). Different forest harvest methods lead to different levels of compaction and different levels of surface disturbance. Full-suspension skyline logging would be the least disturbing while a logger's choice tractor yarded unit would be the most disturbed. The one-end suspension cable-yarding and feller buncher harvesting are intermediate in their impacts; however, it should be noted that feller-buncher harvesting can compact up to 40% of a harvest unit (Spence, et al., 1996). Compaction and displacement of soil also negatively affects site productivity.

Roads contribute more sediment than all other forest activities combined on a per unit area basis (Furniss, et al., 1991), making road treatments the highest priority for sediment reduction on the industrial forest landscape. However, the relationship between this source and overland sources should not be overlooked or inappropriately dismissed as "not a problem" – roads are delivery systems for slope-derived sediments. *See e.g.* Wemple et. a. 1996; Trombulak and Frissell, 2000; Seyedbagheri, 1996.

Section 303 Clean Water Act beneficial uses that are adversely affected by high sediment loads and turbidity include agricultural, industrial, domestic and municipal water supplies, power generation, water storage, and maintenance of fish and other aquatic populations and habitat. For power generation, turbidity increases wear on the turbines and increases water treatment

[11] 33 U.S.C. 1362(12), CWA §502(12) defines "discharge of pollutants" to mean "(A) any addition of any pollutant to navigable waters from any point source, (B) any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft."

costs.[12] Increased sedimentation in reservoirs can significantly decrease the life of the structure.[13] Fish are adversely impacted by siltation and turbidity in numerous ways. The following summary of these impacts is excerpted from *An Ecosystem Approach to Salmonid Conservation.*[14]

> Siltation and turbidity adversely affect fish at every stage of their life cycle. In general, deposited sediments have a greater impact on fish than do suspended sediments: spawning and incubation habitats are most directly affected. Particulate materials physically abrade and mechanically disrupt respiratory structures (e.g., fish gills) or surfaces (e.g., respiratory epithelia of benthic macroinvertebrates) in aquatic vertebrates and invertebrates. Sediment covers intergravel crevices which fish use for shelter, thereby decreasing the carrying capacity of streams for young salmon and trout. Fish vacate pools in summer after heavy accumulation of sediments. Finally, turbidity affects light penetration, which in turn affects the reactive distance of juvenile and adult salmonids for food capture (citations omitted)

Siltation and turbidity also impact stream-dwelling amphibians by, for example, filling intergravel crevices which juveniles and adults use for cover and by scouring algae (the main food source for juveniles) from gravel and streambed surfaces.

Achievement of water quality standards relating to sediment (reduced turbidity and narrative standards) relies in significant part on reducing anthropogenic sediment inputs to headwater streams, many of which exhibit only seasonal flow. For example, forestry related activities tend to cause acute sediment loading in smaller streams but smaller, chronic relative increases in sediment loading in larger-order streams.[15] The result is a continual increase and accumulation of sediment in a downstream direction.[16]

In Oregon, the connection between forestry impacts on small, seasonal streams and the impairment of downstream beneficial uses is well recognized by both EPA and NOAA. For example, in their 1998 Findings regarding Oregon's Coastal Nonpoint Pollution Control Program, submitted pursuant to § 6217(a) of the Coastal Zone Act Authorization Amendments of 1990, the agencies stated: "Oregon has a number of species, in particular anadromous salmonids, that are endangered, threatened, or otherwise seriously at risk, due in part to forestry activities that impair coastal water quality and beneficial uses, including salmon spawning, breeding, and rearing habitat." EPA and NOAA specifically expressed concerns about adequate protection of seasonal, non-fish bearing, small and medium streams. In their Findings, the agencies expressed specific concerns that:

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[12] Reid, L.M. 1993. Research and Cumulative Watershed Effects. USDA Forest Service Gen. Tech. Rep. PSW-GTR-141, at 90.
[13] *Id.*
[14] Spence et al. 1996 at §5.1.2, *see* supra note 3.
[15] Beschta, R. L., J. R. Boyle, C. C. Chambers, W. P. Gibson, S. V. Gregory, J. Grizzel, J. C. Hagar, J. L. Li, W. C. McComb, M. L. Reiter, G. H. Taylor, and J. E. Warila. 1995. Cumulative effects of forest practices in Oregon. Oregon State University, Corvallis. Prepared for the Oregon Department of Forestry, Salem, Oregon, at §7.6-134.
[16] *Id.*

> (U)nder existing State forest practices, medium, small, seasonal, and non-fish bearing streams may be subject to loss of sediment retention capacity, increases in delivery of fine sediments, and increases in temperature due to loss of riparian vegetation. Another concern is provision of adequate long-term supplies of large woody debris in medium, small, seasonal, and non-fish bearing streams, a shortage of which can result in decreases sediment storage in upstream tributaries increased transport and deposition downstream, and overall adverse impacts to beneficial uses.

These problems motivated the agencies to call for stronger protection under state rules for "medium, small, and non-fish bearing streams, including intermittent streams."[17] The ecological principles behind these concerns apply on all landownerships nationwide.

The 1998 CZMA Findings also recognize that land management induced mass wasting impairs water quality and prevents full support of beneficial uses in Oregon's Coast Range. Landslides and debris flows often occur in steep headwater systems. Intermittent channels are sites of land management-initiated debris flows, which can significantly impact aquatic habitat.[18] EPA and NOAA identified "protection of areas at high risk for landslides" as one of the areas "where existing practices under the (Oregon Forest Practices Act) and (Oregon Forest Practices Rules) should be strengthened to attain water quality standards and fully support beneficial uses."[19] In January 2003, the EPA and NOAA reiterated their concerns regarding the need to protect headwater streams and associated landslide-prone areas in Oregon.[20]

Regulation of Roads Discharges. The Clean Water Act contemplates that state programs to control polluting activities would differ as between "point" sources and "nonpoint" sources, with point sources having a stringent permitting requirement.[21] The prevailing practice is for states to consider discharges from forest roads to be "exempt" from the Act's permitting requirements. However, there is a strong argument that owners and operators of forest roads must obtain discharge permits because they discharge stormwater associated with industrial activity and/or pollutants from point sources along logging roads to navigable waters of the United States.[22] Significantly, a permit requirement would make the BLM accountable for monitoring and reporting of roads discharges.

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[17] *Id.* (emphasis added).
[18] FEMAT 1993at V-72.
[19] EPA & NOAA. 1998. Findings for the Oregon Coastal Nonpoint Program.
[20] EPA & NOAA. 2003. 6217 Boundary Decision and Response to Oregon's Supplemental Information in response to the Federal Findings of January 1998, submitted April 1999, January 2002 and October 2002. (noting that Oregon's nonfederal forest practices rules were inadequate to meet temperature and sediment targets in approved TMDLs).
[21] Section 301(a) of the Clean Water Act, 33 U.S.C. §1311(a), prohibits the discharge of pollutants from point sources to navigable waters of the United States unless such discharges are in compliance with a National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to Section 402 of the Clean Water Act, 33 U.S.C. §1342. Additionally, U.S. EPA regulations require NPDES permits for stormwater discharges associated with industrial activity such as logging. 40 C.F.R. 122.26.
[22] Northwest Environmental Defense Center v. Marvin Brown, et. al. (filed September 2006 in Oregon District Court)

As discussed in the expert report of Weaver and Hagans, the BLM estimates that about 36%, or 5100 miles of its roads are hydrologically connected; this very likely undestimates the actual extent to which roads are delivering directly to stream. Yet, none of the action alternatives "contain management objectives, management actions or targets for the reduction of hydrologic connectivity and associated fine sediment delivery from the existing road network." Weaver & Hagans at 15.

3. Stream temperature

Increases in stream temperature can retard or preclude meeting §303 beneficial uses including agricultural, industrial, domestic and municipal water supplies, and maintenance of fish, amphibians and other aquatic populations and habitat.

Following is list, excerpted from *An Ecosystem Approach to Salmonid Conservation,*[23] of some of the important physiological and ecological processes with regards to salmonids that are affected by temperature:

- Decomposition rate of organic materials
- Metabolism of aquatic organisms, including fishes
- Food requirements, appetite, and digestion rates of fishes
- Growth rates of fish
- Developmental rates of embryos and alevins
- Timing of life-history events including adult migrations, fry emergence, and smoltification
- Competitor and predator-prey interactions
- Disease-host and parasite-host relationships
- Development rate and life history of aquatic invertebrates

Stream temperature can be affected by point sources and also suffers from nonpoint source impacts. Improvement in stream temperature is a classic target of TMDLs. In the forestry context, ample studies demonstrate stream temperature increases in headwater streams after riparian vegetation removal. Negative impacts can accrue to fish, amphibians and other aquatic species that depend for part of their life cycles on these small streams. Another important adverse fisheries impact of heating up these headwater streams is the loss of the cold water refugia that forms where the normally cold headwater stream enters a larger fish-bearing stream. These areas are often critical for fish survival during warm months.

Deficiencies w/r/t stream Temperature: With regard to protection of stream temperature regimes necessary to support salmonids and other aquatic life beneficial uses, the BLM's findings that stream temperatures will be adequately maintained to protect aquatic life and meet water quality standards is based on a "limited and selective view of riparian science," that "is heavily skewed

[23] Spence et al. 1996 at §5.1.2, *see* supra note 3.

toward consideration only of the shade function," despite other important factors determinant of stream temperature. (McCullough at 5 and 12). The McCullough report finds that the BLM's proposed riparian management would allow significant degradation of riparian conditions, including reductions in existing levels of effective shade, that will have impacts on stream temperatures, fish, and other aquatic biota. FWS, EPA and NMFS have evaluated data regarding the impacts of harvest in riparian areas on stream temperature and that these findings were apparently not considered in the DEIS. (Oregon Department of Forestry and Department of Environmental Quality 2002; National Marine Fisheries Service 2001)

4. Stream Flow Regimes

§303 beneficial uses affected by stream flow include agricultural, industrial, domestic and municipal water supplies, recreation, aesthetic enjoyment, power generation, water storage and maintenance of fish and other aquatic populations and habitat.

An Ecosystem Approach to Salmonid Conservation summarizes some of the impacts that altered flow regimes have on salmonids[24]:

> Stream discharge strongly influences the amount of habitat available to salmonids and the physical characteristics of those habitats; thus hydrologic changes influence salmonids in a variety of ways. Increases in peak flows can scour spawning gravels, change substrate size, redistribute large woody debris within the channel, facilitate channel incision or widening, and accelerate bank erosion. Reduced summer low flows can dewater stream reaches, prevent or inhibit fish migration, and produce higher summer temperatures. Changes in the seasonal timing of flows may disrupt the migration of salmonid juveniles and adults, and may increase the frequency with which disturbances occur during specific life stages (e.g., the incidence of spawning gravel scouring during early fall). In addition, natural flood and drought cycles are important for normal establishment of riparian vegetation. Hydrologic changes in watersheds may indirectly affect salmonid habitats by altering soil moisture content and stability, which affect the rate of sediment delivery to streams via mass failures and surface erosion.

As discussed in the expert review of J. Rhodes, there are serious flaws in the BLM's analysis of impacts on hydrologic regimes from the proposed management alternatives. In sum, the BLM omitted relevant, credible and available science; it used the wrong scale when analyzing peak flow impacts; it focused too narrowly on single processes, ignoring other relevant ones; and its analysis is not transparent as to sources of potential error. Given the significant impacts that altered peak flows have on aquatic ecosystems and species, these defects render the DEIS inadequate with respect to aquatic resources.

[24] Spence et al. 1996 at §14.2.1, *see* supra note 3.

5. Channel morphology

§303 beneficial uses that can be impacted by changes in channel morphology include fish, amphibians and other aquatic organism populations and habitat, and recreation. Land management can either aggrade or incise channels, and these changes in channel morphology can affect stream temperature, aquatic habitat, and how a channel moves sediment and water. Fish and other aquatic species can be adversely affected by changes in channel morphology in several ways including loss of preferred spawning gravels and loss of rearing and winter habitats.[25]

Increasing sediment supply to a stream beyond its capacity to move the sediment may result in channel aggradation.[26] Conversely, increases in the erosive power of the stream without increases in sediment supply can result in erosion of the channel.[27] Changes in channel morphology can impact other stream parameters. For example, the Water Quality Management Plan for the Grande Ronde, Oregon TMDL[28] contains these items on a list of processes that raise stream temperatures in the watershed:

> 4. Removal of riparian vegetation contributes to stream bank and hill slope failures. Roads also contribute to these failures.
> 5. Bank and slope failures contribute sediment to streams and increase the width depth ratio.
> 6. Solar radiation increases when streams become wider and shallower (creating a larger surface area exposed to the sun in relation to volume – higher width depth ratio).

Any loss of protection for waters that results in additional sediment inputs to streams, and/or loss of sediment storage in a watershed (including in wetlands), may potentially result in changes to downstream channel morphology. Similarly, changes in stream discharge, such as increases in the frequency or magnitude of peak flows, that could result from filling in wetlands could also result in changes channel morphology.

6. Headwater Function affects physical aquatic habitat for fish.

Headwater stream function is critical to maintaining and restoring watershed function and fully protecting beneficial uses. Attainment of §303 beneficial uses relating to fish cannot be meaningfully discussed without reference to the condition of headwater streams, many of which exhibit only seasonal flow, and wetlands. In addition to the critical role that these areas play regarding water quality as discussed above, small, non-navigable streams –including non-perennial stream- are critical to fish both because they provide habitat themselves and because their management strongly affects the physical formation of fish habitat in the larger streams lower in the watershed.

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[25] Reid 1993 at p. 82-83, *see* supra note 21.
[26] Beschta et al. 1995 at §7.5-79, *see* supra note 24.
[27] *Id.*
[28] http://www.deq.state.or.us/wq/TMDLs/TMDLs.htm

In the Pacific Northwest, headwaters make up 85% of total stream miles, taking the form of seeps, rivulets and cascading flows.[29] As one author explains, "If riparian vegetation is the "aorta of an ecosystem" (Wilson 1979), then headwaters should be considered as the capillaries of the system; they also must be healthy if the system is to function properly."[30]

Intermittent streams play an important role in creating and maintaining the physical habitat structure that fish rely on. Headwater systems provide a functional link between terrestrial processes and fish bearing streams.[31] Employing the River Continuum Concept[32] to riparian protection measures would result in the greatest protection occurring in headwater zones.[33] Importantly, intermittent streams store large wood, later providing it to larger streams.[34] Near natural movement of sediment and organic matter in watersheds is required to ensure creation of adequate habitat conditions for aquatic species and to preserve their food resources.

Small streams and wetlands also provide breeding and rearing habitat for fish that later move downstream. For example, coho salmon spawn and the juveniles rear in smaller, upper tributaries and spring Chinook spawn in the headwaters.[35] Other native fishes including sculpins and suckers also spawn in large numbers in secondary channel branches and in floodplain tributary channels, including those that go dry as surface waters and groundwater tables recede in the summer months. In addition, wetlands may contribute to maintaining variable, but moderate streamflows; cool, well oxygenated, unpolluted water; relatively sediment-free streambed gravel; an adequate food supply; and instream structural diversity provided by woody debris all of which are required by salmonids.[36] Many of these areas receive no special protection under any statutes other than the CWA's water quality standards and section 404 provisions (although in practice smaller floodplain wetlands and channels are too often neglected).

Many species depend on small stream and wetlands for one or more portions of their life cycle, and the Act's protection for these areas likely plays an important role in preventing the conditions that would lead to listing more species as threatened and endangered under the Endangered Species Act (ESA). If fully implemented, the CWA offers protection to wetlands

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[29] Bury, R. Bruce. 1988. Habitat relationships and ecological importance of amphibians and reptiles. Pp. 61-76. In K.J. Raedeke, Ed. Streamside management: riparian wildlife and forestry interactions. Institute of Forestry Resources, University of Washington, Contribution Number 59.
[30] Bury 1988, *see* supra note 47.
[31] Gomi, T., R.C. Sidle, and J.S. Richardson. 2002. Understanding processes and downstream linkages of headwater systems. Bioscience 52(10):905-916.
[32] Vannote, R.L., G.W. Minshall, K.W. Cummins, J.R. Sedell, and C.E. Cushing. 1980. The river continuum concept. Canadian Journal of Fisheries and Aquatic Sciences 37:130-136.
[33] Noss, R.F. ed. 2000. The redwood forest: History, ecology, and conservation of the coast redwoods. Island Press. Covelo, California.
[34] *Id.*
[35] Lichatowich, J. 1999. Salmon Without Rivers. Island Press. 317 pp.
[36] Spence et al. 1996 at §6.10.3, *see* supra note 3, *citing* Cederholm, C.J. 1994. A suggested landscape approach for salmon and wildlife habitat protection in western Washington riparian ecosystems. Pages 78-90 *in* A. B. Carey and C. Elliot, editors. Washington Forest Landscape Management Project Progress Report. Washington Department of Natural Resources, Olympia, Washington.

and small streams that can provide proactive maintenance of healthy populations of a myriad of species that depend on these areas.

7. Non perennial waters provide important physical aquatic habitat for fauna other than fish, including amphibians, reptiles and fresh water mollusks.

"Temporary" streams, wetlands, and wet meadows provide important breeding, rearing, and dispersal habitat for many endangered and at-risk amphibian species.[37] For example, within the planning area, some amphibian species breed only in mountain streams including the tailed frog and Cope's salamander, and torrent salamander – all Bureau special status species.[38] The red-legged frog breeds in intermittent waters.[39] In addition, some reptile species and many fresh water mollusks depend on wetlands and small streams. Western pond turtles – a Bureau Sensitive Species -- rely on wetlands,[40] and many freshwater mollusk species are restricted to single stream systems, seeps and springs.[41]

We note that page LVII of the WOPR DEIS concedes that the habitat needs of species associated with intermittent streams would not be met under alternatives 2 and 3. These findings conflict with the federal agency duty to meet Clean Water Act requirements to maintain water quality for aquatic organisms.

D. The Agency's proposal must comply with Oregon's Antidegradation Policy implementing the Clean Water Act. OAR 340-041-0004 et. seq.

Oregon's Antidegradation Policy applies broadly to all "decisions that affect water quality" and is intended to prevent "unnecessary further degradation from new or increased point and nonpoint sources of pollution . . . . and to protect, maintain, and enhance existing surface water quality to ensure the full protection of all existing beneficial uses." OAR 340-041-004. With certain enumerated exceptions, decisions which would degrade water quality are required to undergo an "antidegradation review."

1. Waters Meeting Standards (High Quality Waters). The duty not to degrade these high quality waters without a showing is non-discretionary. Where water quality standards are being met, Oregon's policy is "that level of water quality must be maintained and protected," unless – after intergovernmental and public participation processes are completed – it is determined that: (1)

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[37] *See e.g.*, Knutson, M.G., J.R. Sauer, D.A. Olsen, M.J. Mossman, L.M. Hemesath, and M.J. Lannoo. 1999. Effects of Landscape Compositions and Wetland Fragmentation on Frog and Toad abundance and Species Richness in Iowa and Wisconsin, U.S.A. Conservation Biology 13:1437-1446; and Lowe, W.H. and D.T. Bolger. 2002. Local and landscape scale-predictors of salamander abundance in New Hampshire headwater streams. Conservation Biology 16:183-193.

[38] FEMAT 1993, Appendix V-E

[39] *Id. citing* O'Connell, M.A., J.G. Hallet and S.D. West. 1993. Wildlife use of riparian habitats: A literature review. TFW-WL1-93-001, *citing* Hayes, M.P., Jennings M.R. 1986. Decline of ranid frog species in western North America: Are Bullfrogs (*Rans catesbeiana)* responsible? Journal of Herpetology 20: 490-509.

[40] FEMAT 1993

[41] *Id.*

the action is "necessary," i.e. benefits outweigh environmental costs; (2) water quality standards are met, and; (3) federal threatened and endangered species "***will not be adversely affected".*** (emphasis added).

The rules note that "Insignificant temperature increases . . . .are not considered a reduction in water quality." OAR 340-041-0004 (3)(c). However, based on the analysis of Dale McCullough, PRC finds that there is not a rational scientific basis to find that the proposed reduction in riparian protection will not lead to a significant increase in stream temperatures. (McCullough Report, passim). The rules also note that Short Term Water Quality Degradation with substantial and desirable environmental benefits may be allowed, but the weakened aquatic conservation measures proposed in the DEIS would not meet this exemption from antidegradation review.

2. Impaired/303d Waters. Where water quality already is impaired, further degradation will only be allowed upon the application of an exception by the Oregon Environmental Quality Commission or ODEQ based on certain required findings in addition to those required to degrade waters meeting or exceeding standards. OAR 340-041-0004 (9).

3. Outstanding Resource Waters have the smallest allowance for exceptions to the state policy's presumption against water quality degradation. OAR 340-041-004 (8). X

The DEIS does not address the proposal's compliance with the antidegradation aspect of water quality standards in any meaningful way.

Antidegradation compliance has been flagged as a priority in Oregon. According to its the State Watershed Recovery Plan "DEQ will implement its antidegradation water quality standard to address degradation of water quality that is currently cleaner than parameter specific water quality standards would allow . . . . and will work with . . . . federal natural resource agencies to ensure the antidegradation standard is implemented for nonpoint sources."

E. Stream Temperature Analysis Demonstrates Misplaced Reliance on USFS/BLM TMDL Implementation Strategies Guidance (USFS/BLM, September 9, 2005).

The basis for the agency's findings with regard to management impacts on shade and stream temperature relies on a mis-interpretation of the applicable water quality standards (these must include approved TMDL load allocations) and an over-interpretation of existing guidance which itself lacks technical merit. BLM appears to have decided that all they need to do at most is meet 80% effective shade, not the TMDL targets or the actual temperature standards.

In sum, the BLM has used EPA/DEQ approval of a guidance document that attempts to describe what kind of discretion federal managers have under the Northwest Forest Plan to do riparian management and thinning in an attempt to undermine the whole approach. This reliance is misplaced for numerous reasons detailed in the McCullogh Report.

We note that the BLM/USFS Implementation Strategy is peppered with caveats such as: "The proposal is not intended to depart from the precautionary principle but is intended to accommodate, with regulatory certainty, active management of riparian areas.:). See particularly pages 11 ("Eighty percent does not represent a minimum threshold, standard, or load allocation but simply that point beyond which a reduction in stream temperature as a function of shade may not be measurable) and 15 (Riparian reserve sufficiency) and pages 17 et. seq. ("When effective shade increases beyond 80%, the trees behind the trees that block solar radiation provide minimal additional shade. Thus, it is assumed that an insignificant change in temperature would result as a function of increasing effective shade beyond 80% "(Figure 2) (page 20)

The intent of the Implementation Strategy was to help the federal management agencies propose riparian management projects that minimize reductions in effective shade at the site level – not to create a landscape-wide plan for managing all riparian areas for logging. The BLM seems to have nonetheless ignored all of the caveats at the top of page 25 about riparian management.

F. The BLM does not demonstrate compliance with approved TMDLs.

The existing Northwest Forest Plan provisions have been approved by EPA in numerous instances as adequate to provide reasonable assurance that the load allocations determined in TMDLs for both sediment and temperature will be met. No such supportable finding is made in the DEIS.

G. Conclusion: The DEIS Fails to Demonstrate Compliance with the Clean Water Act

Water quality standards under the Clean Water Act apply not only to fishbearing, perennial, or "high intrinsic potential" streams, but to all waters of the state. In order for the BLM's management plan to meet minimum water quality requirements, it must ensure that water quality standards and the beneficial uses they are designed to protect are, in fact, fully protected. These uses include all aquatic life -- not just salmonids.

The default riparian buffers and prescriptions of the Northwest Forest Plan's ACS – including the overarching principle that deviation from these defaults requires watershed analysis that demonstrates that any management within the buffers (Riparian Management Areas, RMAs) promotes maintenance or recovery of riparian function – remain the best available science to ensure these requirements are met.

As a matter of public policy, it is a waste of public resources for the federal government to engage in revisions to its management plans which do not result in a high likelihood that the new management practices will be sufficient as implementation mechanisms to meet water quality standards, including those which have been translated into watershed-specific Total Maximum Daily Loads. The expenditure of political and financial resources needed to make changes to the existing program should not be wasted on a process that must be repeated time and again in individual watersheds.

We remind the BLM again that compliance with water quality standards means more than attainment of numeric or narrative "criteria." Antidegradation obligations and the overarching duty to "fully protect beneficial uses" also apply.

V. The BLM has not demonstrated compliance with the Endangered Species Act

Under Section 7(a), the BLM has an affirmative duty to conserve species and habitats affected by its management. This duty goes beyond simply avoidance of "jeopardy" for listed species and requires the BLM to use its full authority and discretion to advance species conservation purposes independently of the mandates of other legal authorities. Furthermore, when faced with alternative policy choices, the conservation duty compels the BLM to choose the alternative that best achieves species conservation where non-conservation purposes would be equally served.

PRC finds that the DEIS does not provide us with a rational basis to conclude that the BLM will meet its conservation duty by implementing any of the action Alternatives. Because there are numerous ESA listed species that may be adversely affected by this proposal, PRC also notes that the DEIS does not include analysis to support a "no jeopardy" finding for listed salmon, steelhead, suckers, bull trout and chub. Because ESA compliance is a stated important, in fact determinative, decision standard for this process, it would best serve public policy to refrain from issuance of any final decision until the public has been afforded the opportunity to review the Biological Opinions that must be prepared by USFWS and NOAA Fisheries.

A. The BLM has an Affirmative Conservation Duty toward the species and habitats under its management

The duty under section 7(a)(1) of the ESA to conserve threatened and endangered species directs that all federal agencies "shall, in consultation with and with the assistance of [FWS and NMFS], utilize their authorities in furtherance of the purposes of [the ESA] by carrying out programs for the conservation of endangered species and threatened species ...." Section 2(c)(1) further "declare[s] . . . the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of [the ESA]." Conservation under the ESA means "to use and the use of all methods and procedures which are necessary to bring any endangered or threatened species to the point at which t he measures provided pursuant to [the ESA] are no longer necessary."

The conservation provision was interpreted by the Supreme Court in Tennessee Valley Authority (TVA) v. Hill, where the Court concluded that the ESA's call for federal agencies to carry out programs for the conservation of endangered and threatened species is "no less than "stringent, mandatory language" that "reveals an explicit congressional decision to require agencies to afford first priority to the declared national policy of saving endangered species." TVA v. Hill, 437 U.S. 153 (1978) at 183, 185. In essence, this means that the ESA gives "endangered species priority over the primary missions of federal agencies." Id. at 185.

Importantly, the BLM's conservation duty goes beyond that which is required to avoid jeopardy – the focal requirement of the Section 7 consultation process that will ensue prior to a Record of Decision on WOPR. *See e.g.* Carson-Truckee Water Conservancy District v. Watt, 741 F. 2nd 257, at 261-262 (9th Cir. 1984) cert. denied, 470 U.S. 1083 (1985) (finding Section 7(a)(1) grants wide discretion to administer all programs to advance conservation and is not limited to jeopardy-avoidance actions). The BLM, therefore, need not skimp on species conservation for fear of running afoul of its other mandates – including the O & C Act – because the ESA grants broad discretion to advance species conservation purposes that supercede the mandates of other legal authorities.[42]

When faced with alternative policy choices, the ESA's conservation duty also restricts the agency's discretion to choose among alternatives. Caselaw tells us that if an alternative to a challenged action would be equally as effective at serving the BLM's non-conservation interests, but would enhance conservation to an equal or greater degree then the agency must adopt the better conservation alternative. Pyramid Lake Paiute Tribe v. United States Department of the Navy, 898 F.2d 1410 (9th Cir 1990) (balancing conservation duty against conflicting discretionary duties).

The caselaw also indicates that to the extent the BLM chooses management actions which do not maximize species conservation, that is should be prepared to articulate the rational connection between some set of relevant factors at the management decision being made. NWF v. Hodel, 23 Env't Rep. Cas. (BNA) 1089, 1092 (E.D. Cal Aug. 26, 1985).

Where recovery plans have been established, this conservation duty extends to implementing the relevant provisions of these plans to accomplish the Act's goal of recovery. *See* Southwest Center for Biological Diversity et. al. v. Bartel et. al, Case No. 98-CV-2234-B(JMA) (finding that the ESA requires the FWS to follow through with measures identified in recovery plans). The DEIS does not mention the BLM's duties arising from recovery plans that do exist, such as that for the Oregon chub,[43] and make no specific commitments based on the fulfillment of recovery plan objectives.

B. ESA duties can include an obligation to actively address the continuing adverse impacts of past management actions, most notably including the existing road system

Natural resource damage from roads is a thorny policy issue, largely because most problems stem from poor road location and design choices that were made decades ago, and because active restoration and significant investment usually are needed. Nonetheless, the legal and financial

[42] We note, however, that even the ESA does not authorize a federal agency to do something that it has no power to do under its enabling statutes. Sierra Club v. Babbitt, 65 F.3d 1502 (9th Cir. 1995) (maintaining the NWFP's aquatic protections would not require the BLM to go beyond the powers it is given in FLPMA).

[43] U.S. Fish and Wildlife Service. 1998. Oregon Chub(Oregonichthys crameri) Recovery Plan. Portland, Oregon. 69+ pp; http://ecos.fws.gov/docs/recovery_plans/1998/980903b.pdf.

responsibility for road-related public natural resource damage on BLM lands belongs to the agency.

Roads management has received specific objectives to be achieved through watershed analysis in influential biological opinions on forest plans affecting wide-ranging salmon, steelhead and bull trout. Some opinions have required that watershed analyses be conducted to: serve as the "primary process for integrating and interpreting amended road information, inventories and other potential information," (NMFS, Salmon and Steelhead BO, 1998), and to address "the design and prioritization of . . . culvert replacement upgrades and road decommissioning actions." (USFWS, Bull Trout Biological Opinion, 1998).

Relevant direction includes current NOAA Fisheries guidance for federal lands consultations, which recognizes a series of indicators that relate directly to the impacts of roads on salmonids in making jeopardy determinations. These indicators include:

- Road density: properly functioning is characterized as being less than 1 mi^2 for bull trout watersheds and < 2 mi^2 for salmon and steelhead watersheds.
- Road location: the existence and extent of valley bottom roads are deemed relevant to proper watershed function.
- Increase in drainage network: properly functioning is defined as zero or minimum increases in active channel length correlated with human caused disturbance (e.g. trails, roadside ditches, compaction, impervious surfaces etc.)
- Change in peak/base flows: "watershed hydrograph indicates peak flow, base flow, and flow timing characteristics comparable to an undisturbed watershed of similar size, geology and geography."
- Floodplain connectivity: channel able to interact with floodplain at higher flows.
- Substrate character and embeddedness: gravels/cobbles have clear interstitial spaces, reach embeddedness < 20%.
- Physical barriers: human-made barriers present in watershed allow upstream and downstream fish passage at all flows.
- Suspended sediment/intergravel dissolved oxygen/turbidity. Turbidity in NTUs is preferred indicator, "low" values desired. Ballpark values for intergravel and surface fines.[44] [45]

C. Conservation Needs of Unlisted Stream-Associated Amphibian Species Include Headwater Protection

With regard to unlisted species, the BLM has a duty to avoid taking actions that would contribute to the need to list. In Seattle Audubon Society v. Lyons, 871 F. Supp. 1291 (W.D. Wash 1994),

[44] USDA-FS, NOAA-NMFS, USDI-BLM, USDI-FWS, "Analytical Process for Developing Biological Assessment for Federal Actions Affecting Fish Within the Northwest Forest Plan Area," Appendix A, Table of Population and Habitat Indicators, November 2004.

[45] Oregon Department of Environmental Quality. 2002. Nestucca Bay Watershed Total Maximum Daily Load. April 2002 (p 2, 63, 72).

the court held that the BLM appropriately construed Section 7(a)(1) to authorize actions necessary to minimize the need to list species in the future. Id at. 1314. The O&C Lands Act did not limit the BLM's discretion to manage federal lands so as to minimize future listings. As the court states, "the BLM is a steward of these lands, not merely a regulator." Id.

The WOPR proposals do not demonstrably avoid contributing to the need to list stream-dependent amphibians. Amphibians such as the inland tailed frog, Cascade and Columbia torrent salamanders, and the Foothill yellow-legged frog are stream-associated species that require breeding and rearing habitat above stream reaches occupied by salmonids. Conservation of these species therefore depends on the effective conservation of smaller perennial and nonperennial headwater reaches. As discussed elsewhere in these comments, the WOPR proposes management prescriptions are not demonstrably effective to protect these smaller stream reaches against logging-related impacts harmful to headwater stream functions and processes, and therefore to amphibians. We note that the proposed plan falls short in some key respects of the minimum protections deemed necessary to protect amphibians in Washington's statewide Forests Practices HCP. (Washington State Department of Natural Resources, Draft Forest Practices Habitat Conservation Plan, December 2004, chpt. 4) (50 foot no-cut provided on more stream types than Alternative 2). The WOPR management alternatives area likely to leave significant stretches of important streams and site-specific habitat open to logging, including large clearcuts, and associated activities, leading to local extirpations and increased habitat fragmentation.

Studies have specifically linked clearcut units and unbuffered streams with reductions in populations of tailed frogs. (Bury and Corn, 1988, Corn and Bury, 1989, Welsh 1990, Bury et. al. 1991, Bull and Carter, 1996, Dupuis and Stevenson 1999). To the extent that large clearcuts in upland areas still are allowed under the WOPR, these activities are likely to severely limit the populations of tailed frogs, as well as other amphibians sensitive to intensive harvest.

Research on effective size and configuration of buffer areas, though not entirely clear, puts the effectiveness of the WOPR as a conservation plan for amphibians squarely in question. Olson et. al. 2007 supports the protection of entire headwater patches that retain connectivity between subdrainages at the 6th field watershed scale. The FWS has recognized that riparian and aquatic strategies consisting of buffers averaging less than 100 ft. may not be adequate on small streams, and the extreme sensitivity of some wetlands, seeps, springs, and source areas may necessitate even larger minimum buffers. USFWS (1998).

Furthermore, although maximum shading capacity may be within a width of 25 m with 90% of that capacity occurring at 17 m (see Budd et al. 1987), it appears that widths of 30 m or more are needed to stabilize microclimates within streamside riparian zones (Brosofske et al. 1997). To reduce sediment flow and maintain other riparian functions, the minimum buffer width may need to be 60–80 m wide (Ledwith 1996, Welsh et al. 1998) or up to 100 m (McComb et al. 1993). Vesely and McComb (2002) reported that minimum buffer strips on most private forests (6.1 m along medium-sized streams and no buffers along headwaters in Oregon) may not be sufficient to ensure that amphibian communities in managed stands remain as diverse as in unlogged

forests, recommending buffers on all permanent headwater streams and buffer strips 20 m wide or more on all streams. (Bruce M. Bury, Personal communication, 2004).

Once impacted, populations may not recover for many decades. Bury and Pearl found that stream amphibians in the Oregon Coast Range had not recovered 35-50 years after clearcut harvesting. (Bury and Pearl 1999; Major and Bury, 2001). Harvest of stands every 60-70 years may be too frequent for sensitive species (e.g., torrent salamander and tailed frog) to recover. (Bruce Bury, personal communication, 2004).

D. A Biological Opinion, or at least the rationale for a Section 7 determination should be published with opportunity for public comment

Because the minimum requirements of the Endangered Species Act, including those under Section 7, are key decision standards for the proposed action, meaningful public review requires scrutiny of the proposed action's likely compliance with the ESA. Therefore, it would be highly appropriate to include at least a draft biological opinion in the public review package.

We note that the public policy reasons for integrating ESA compliance with NEPA review have led the Services to begin integrating section 7 consultation into the public participation phase of Habitat Conservation Plans, treating the two processes as "concurrent and related, not independent and sequential, processes." USFWS and NMFS HCP Handbook, 1996 at 3-16. Using the same logic, it would be highly appropriate to include at least a draft biological opinion in this review package

VI. The BLM has not adequately met its legal obligations regarding Wild and Scenic Rivers

The DEIS does not adequately evaluate the proposal's impacts on protected values of designated, eligible or suitable Wild and Scenic River segments or on factors relevant to segment classification as wild, scenic or recreational. Specifically, reasonably foreseeable impacts from land management changes within, upslope and/or upstream of river corridors are not disclosed, nor are water quality impaired segments given any consideration. Further, the DEIS does not meaningfully demonstrate how the action alternatives will provide adequate protection to designated, eligible and suitable rivers segments. Lastly, the there is no evidence in the available public documents that potential additions to the National Wild and Scenic River System were considered during this planning process, as required by statute and implementing rules and guidance.

A. The DEIS does not Adequately Evaluate the Proposal's Impacts on Designated, Eligible or Suitable Wild and Scenic Rivers

The DEIS fails to consider potential additions to the WSR System in this planning action, as required by statute and implementing rules and guidance. There is no evidence in the available public documents that potential additions were considered during this planning process.

Protective management under the Wild and Scenic Rivers Act of federal lands begins at the time a river segment is found eligible. Identified Outstandingly Remarkable Values (ORVs) must be afforded adequate protection, subject only to valid existing rights. Adequate protection requires sound resource management decisions based on National Environmental Policy Act (NEPA) analysis.

According to the Interagency Wild & Scenic Rivers Council, management prescriptions for eligible river segments should provide protection as follows:

> *Free-flowing Values.* The free-flowing characteristics of eligible river segments cannot be modified to allow stream impoundments, diversions, channelization and/or rip-rapping to the extent authorized under law.
>
> *River-related Values.* Each segment shall be managed to protect Outstandingly Remarkable Values (subject to valid existing rights) and, to the extent practicable, such values shall be enhanced.
>
> *Classification Impacts*. Management and development of the eligible river and its corridor should not be modified, subject to valid existing rights, to the degree that its eligibility or tentative classification would be affected (i.e., its tentative river area classification cannot be changed from wild to scenic, or from scenic to recreational).

The WOPR DEIS does not adequately evaluate the impact of any of the Action Alternatives on either free flowing or river-related values, nor on the classification of eligible, suitable or designated segments. The BLM further fails to fulfill its duty to consider potential additions to the Wild and Scenic River System in this planning process.

B. The BLM is Required to, but did not, Consider Potential Additions to the National Wild and Scenic Rivers Act in the Plan Amendment Process

As noted during scoping, the BLM is required by the National Wild and Scenic Rivers Act of 1968 (as amended) (WSRA) to consider potential additions to the National Wild and Scenic Rivers System during plan amendment.

> "In all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas, and all river basin and project plan reports submitted to the Congress shall consider and discuss any such potentials. The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States shall be evaluated in planning reports by all Federal agencies as potential alternative uses of the water and related land resources involved."[46]

[46] National Wild and Scenic Rivers Act of 1968, 16 U.S.C. § 1276(d)(1).

The BLM Manual (8351) elaborates on this Congressional directive and provides instructions on how to implement it.[47] Additional clarification is found in a BLM Instruction Memorandum issued by the Washington Office.[48] As noted in scoping on the proposed action by A. Kerr, this direction from the BLM Director is detailed and unambiguous but in previous planning efforts BLM nonetheless failed adequately identify and evaluate many potential wild, scenic and recreational rivers in Western Oregon. (Kerr, 2005).

According to the WSRA and BLM Manual, the BLM must consider potential additions to the National Wild and Scenic Rivers System as an integral part of revising the six BLM resource management plans for Western Oregon.[49] BLM must include in each plan revision: (1) A Free-Flowing River Inventory; (2) An Eligibility Determination; (3) Protective Management for Eligible Rivers; (4) A Suitability Determination; (5) Public Participation.

1. Free-Flowing River Inventory. An inventory of free-flowing ("Existing of flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway")[50] "rivers" ("A flowing body of water or estuary or a section, portion, or tributary thereof, including rivers, streams, creeks, runs, kills, rills, and small lakes")[51] within "BLM administered lands and related waters."[52] The presence of dams or diversions on a river, either upstream or downstream of the free-flowing segment, does not disqualify it from consideration.[53] The inventory of free-flowing rivers must be comprehensive:

a. There is no minimum length for free-flowing segments. The BLM Manual states "Congress has designated a segment as short as .4 miles. A river segment is of sufficient length if a specific outstandingly remarkable value(s) can be protected (a factor in the suitability determination, not eligibility determination) should the segment be designated."[54]

b. A "river" need not be perennially flowing or even "floatable or boatable" at any time of the year. A seasonal or episodic flow does not, per se, disqualify a free-flowing river from inclusion in a free-flowing river inventory.[55]

c. Adjoining land need not be entirely BLM land. According to the BLM Manual, "(i)n cases where a particular river segment is *predominately* non-federal in ownership

[47] BLM Manual 8351. Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation and Management (Dec. 22, 1993), *hereinafter* "BLM Manual."
[48] Director, National Landscape Conservation System, Bureau of Land Management. Clarification of Policy in the BLM Manual Section 8351, Wild and Scenic Rivers, with Respect to Eligibility Criteria and Protective Management. Instruction Memorandum No. 2004-196. (June 21, 2004), *hereinafter* "BLM IM No. 2004-196."
[49] BLM Manual 8351.06B (Evaluation) at 10.
[50] BLM Manual 8351 (Glossary of Terms) at 38.
[51] BLM Manual 8351 (Glossary of Terms) at 39.
[52] BLM Manual 8351.01 (Purpose) at 5.
[53] BLM Manual 8351.31B (Free-Flowing) at 16.
[54] BLM Manual 8351.24A at 14.
[55] BLM Manual 8351.31B.1 at 16, *also* BLM IM No. 2004-196.

and contains interspersed BLM-administered lands, BLM shall evaluate only its segment as to eligibility and defer to either the State or private landowners' discretion as to their determination of eligibility" (emphasis added).[56] Predominately means "for the most part: MAINLY."[57] BLM lands in Western Oregon are predominantly—but not exclusively—a checkerboard configuration of land ownership with other federal, state and private lands. Where a free-flowing river flows through a checkerboard configuration, BLM must first determine if it is the majority (predominant) landowner. If it is, BLM must evaluate the entire river segment for eligibility (see below). If it is not, BLM must evaluate only its portions of the river of the free-flowing river segment for eligibility.

2. Eligibility Determination. "To be eligible, a river segment must be 'free-flowing' and must possess at least one river-related value considered to be 'outstandingly remarkable.'… No other factors are considered in determining the eligibility of a river segment."[58] "Determinations of eligibility must be documented … prior to the formulation of alternatives but no later than the release of the draft RMP [Resource Management Plan], or plan amendment."[59]

a. Outstandingly Remarkable Values (ORVs). The BLM Manual defines "outstandingly remarkable values" as "(v)alues among those listed in Section 1(b) of the [National Wild and Scenic Rivers] Act: 'scenic, recreational, geological, fish and wildlife, historical, cultural, or other similar values….' Other similar values may be hydrological, scientific or research values."[60] In determining what constitutes an outstandingly remarkable value, we recommend that BLM rely not only on the guidance provided in its manual,[61] but to review (1) the vast array of specific and distinctive ORVs that have been ascribed to the various units of the National Wild and Scenic Rivers System (NWSRS), particularly (2) those units of the NWSRS in Oregon and especially Western Oregon and (3) Forest Service potential Wild and Scenic River WSRA eligibility determinations, as specified in their land and resource management plans, especially in Western Oregon.

b. Tentative Classification. After a river segment is determined eligible for inclusion in the NWSRS, BLM must recommend the classification of the segment as either "wild," "scenic" or "recreational."[62]

3. Protective Management. Upon a determination of eligibility and assignment of tentative classification(s), BLM must provide "adequate protection" to the free-flowing

[56] BLM Manual 8351.06B (Evaluation) at 10.
[57] Merriam-Webster's 11th Collegiate Dictionary, Macintosh Computer Edition, Ver. 3.0.
[58] BLM Manual 8351.31A at 15.
[59] BLM Manual, 8351.31 at 15.
[60] BLM Manual 8351 (Glossary of Terms) at 39.
[61] BLM Manual 8351.31C (Outstandingly Remarkable Values) at 16-17.
[62] BLM Manual 8351.32 (Classification and Protective Management) at 18-19.

nature of the "river," the ORV(s) and the tentative classification (a "wild" classification cannot be allowed to degrade into a "scenic" classification, etc.).[63]

4. Suitability Determination. "Each eligible river segment is further evaluated in the RMP process to assess whether or not it would be suitable for inclusion in the NWSRS."[64] "In most cases, BLM will assess river suitability in the RMP process and document the tentative classification of the appropriate segment(s) (wild, scenic and/or recreational). In assessing eligible river segments in the planning area, the RMP must prescribe measures to ensure protection for the segment as well as adjacent lands pending a final suitability determination and, if applicable, subsequent action by Congress. "Where a suitability determination cannot be made in the RMP, a separate EIS may be required to make that determination…. The projected schedule for completing the suitability evaluation, and other relevant information shall also be set forth in the RMP…." "…(A)ll eligible river segments shall be evaluated for suitability or nonsuitability using the BLM RMP process." (emphasis in original).[65]

5. Public Participation. BLM is required to consider for potential eligibility status, "(r)iver segments identified in public scoping during the RMP process."[66] The current DEIS makes *no* mention of BLM's significant obligations under BLM Manual 8351 to satisfy the Congressional command of the Wild and Scenic Rivers Act. The BLM has a duty to conduct a supplemental process that specifically asks the public to make WSRA nominations.

Caselaw confirms the scope of agencies' duties under the to discover rivers eligible for inclusion in the National Wild and Scenic River System. Center for Biological Diversity v. Veneman, 394 F. 3d at 1110; see also Washington County, Utah, et. al., 147 IBLA 373, 377 (March 4, 1999) (discussion of section 5 (d) mandate); SUWA, 132 IBLA 255 (April 19, 1995) (rejecting groups challenge to section 5 (d) inventory as pre-decisional).

Once identified, such potential additions to NWSRS or eligible rivers are to be taken into account by Federal agencies in all planning activities (at either the programmatic or site specific level). In sum, section 5 (d)(1) "requires all [Federal agencies] to take into account potential scenic river areas in their planning activities and directs the Secretary of the Interior and the Secretary of the Agriculture to determine what scenic river areas there are that should be taken into account by such agencies." H.R. Report 90-1623 at 3811.[3]

According to the Ninth Circuit, section 5 (d)(1) of the WSRA requires federal agencies to "consider specific rivers when planning for specific projects. For example, the Forest Service's failure to consider a specific [eligible] river when granting a license to permit livestock grazing

[63] BLM Manual 8351.32C (Protective Management) at 19.
[64] BLM Manual 8351.33 (Determination of Suitability) at 20.
[65] BLM Manual 8351.33A. (RMP Preference) at 20.
[66] BLM Manual 8351.23 (Other Sources) at 14.

within the watershed of that specific river" could be deemed a violation of section 5 (d)(1) of the WSRA. Center for Biological Diversity v. Veneman, 394 F. 3d at 1114. Once a "potential addition" or eligible river is identified by federal agencies, the procedural obligations of section 5 (d)(1) are triggered. [67]

C. What analysis did the BLM do and why is it deficient?

Wild and Scenic River resources are discussed most prominently in Chapter 2 (Alternatives) in Table 58 "District-specific designated wild and scenic rivers and river segments,"; Table 59, "District-specific suitable wild and scenic rivers and river segments; " and Table 60, "District-specific eligible wild and scenic rivers and river segments," DEIS pages 146-152.

In sum, there are 12 affected designated river segments totaling 104 miles; 9 affected "Suitable" segments totaling 117.9 miles, and a staggering 101 eligible segments totaling 1753.9 miles that are affected by this proposal. Rivers found eligible are supposed to be managed so that their Wild and Scenic values are preserved until a designation decision is made.

Although the charts list river miles and BLM acres, nowhere does BLM present such relevant but easily calculable statistics as the proportion of BLM acres in the river corridor (which we know are available because totals by river class are included in Table 128), nor are alternatives compared using any method for their differential impact on Wild and Scenic Rivers.

There is very little ink given to Wild and Scenic River resources and impacts in Chapters 3 (Affected Environment) or 4 (Environmental Consequences) of the DEIS. Discussion is concentrated in two areas of Chapter 3: Visual Resources, at pp. 420-421 (clarifying that rivers designated as wild are visual resource inventory Class I); National Landscape Conservation System pp. 422-424 and one page in Chapter 4, "Environmental Consequences: National Landscape Conservation System."

Although the DEIS states that "all wild and scenic river corridors would not be included in the harvest land base under all four alternatives" only wild rivers are withdrawn from timber harvest. DEIS at 793. With regard to designated, eligible or suitable river segments, the DEIS nonetheless concludes that outstandingly remarkable values would be protected because:

- Designated, suitable and eligible "wild" segments are withdrawn from timber harvest (Table 28, page 424), and
- In "scenic" or "recreational," eligible and suitable segment corridors "harvesting would be done in a manner that would not impair their free-flowing character,

[67] Id. The Fourth Circuit has adopted a different interpretation of section 5 (d) of the WSRA – determining that the identification of "potential additions" or eligible rivers – such as those documented in the NRI – does not "impose any particular obligations on federal agencies." Hughes River Watershed Conservancy, 81 F. 3d at 450, but the law of the 9th circuit is appropriately applied to the WOPR DEIS.

> classification or outstandingly remarkable values," and because it would be "designed to have either a positive or neutral effect on a river segment's classification." DEIS at 793.

The public must go to some considerable trouble to learn anything relevant to Wild and Scenic Rivers and BLM landownership from the maps, because neither individual segments nor watersheds are labeled. Even with some limited GIS mapping capability – not available to the general interested public -- PRC was unable to generate comprehensible, informative maps on this issue.

We note that the DEIS makes no reference to the underlying documents and history of the eligible or suitable rivers and the planning processes through which they were identified. We note that if a river is determined by the agency to be both free-flowing (as defined in the WSRA) and to posses at least one ORV, then it is per se eligible for inclusion in the NWSRS. *See* Center for Biological Diversity (CBD) v. Veneman, 394 F. 3d at 1111; 16 U.S.C. § 1273 (b) (defining eligibility). Federal agencies may not legally forgo their procedural and substantive obligations in the WSRA by arguing that a particular river or segment thereof is only "potentially" eligible or suitable should be challenged. If the agency makes the requisite findings with respect to eligibility or suitability, then the river qualifies as eligible or suitable and the procedural and substantive obligations of the WSRA apply.

In sum, the BLM's analysis with respect to Wild and Scenic River resources is deficient in at least the following respects:

1. Meaningful Impacts Analysis is Lacking. It does not provide information that allows the public to assess the impacts of the proposed decision on protected segments. For example, it would seem logical to provide data regarding the acres of BLM land in each land classification either within or draining to segment corridors, the land management classifications being proposed for these acres, how these classifications differ from the current ones, and the likely impacts of these changes on the relevant values of the designated segments.

2. Adequate Protection of Identified Segment Values is not Demonstrated. All action alternatives merely restate that the standards of the WSRA will be applied at the project level without an accompanying determination about whether or why the proposed management will meet these standards. The BLM has a duty to disclose the impacts on these river segments that are reasonably foreseeable from the replacement of the existing management plan with each of the alternatives. It does not fulfill this duty.

3. Downstream/Upslope Impacts Are Likely and Should Have Been Presented. The DEIS does not in any way account for the environmental impacts inside river corridors of increased timber harvest outside of river corridors. Such impacts are capable of evaluation, and in fact appear to be likely given the significant reductions in riparian protection and increased timber harvest proposed under this action – management changes which are inadequately explained and which lack a rational basis in a plethora of reasons stated elsewhere in these comments and supporting expert reports.

4. Impaired Segments not Particularly Identified. There is no special consideration given for segments that are already suffering from water quality impairment. We note that as of 1997, PRC estimated that at least 50% of the wild and scenic river segments in Oregon were wholly or partially listed as not meeting water quality standards under the DEQ's 303(d) List.

VII. The BLM's proposed action alternatives are arbitrary and capricious under the APA

The BLM has failed to explain how the WOPR action alternatives will meet the agency's substantive obligations under the O&C Act, the CWA, and the ESA, in violation of the APA. It has also failed to address the concerns that led to the adoption of the NWFP. To withstand arbitrary and capricious review, the BLM must "articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made" and show that the decision was based on "consideration of the relevant factors." Motor Vehicle Manufacturers Assoc. v. State Farm Mutual Auto. Ins. Co., 463 U.S. 29, 43 (1983). "An agency must cogently explain why it has exercised its discretion in a given manner." *Id.* at 49. For all of the reasons stated in the various sections of these comments, the BLM has failed to meet this standard.

VIII. CONCLUSION

The pervasive and systematic biases, flaws, errors, and oversights in this DEIS preclude it serving as an adequate NEPA document. It is our view that BLM must markedly improve these analyses if BLM is to meet its obligation of disclosure and reasoned analysis, and issue a supplemental DEIS before proceeding with a Final EIS and decision. Alternatively, BLM could withdraw the DEIS and revert to NWFP authority.

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